

JPRS 83919

18 July 1983

# USSR Report

ECONOMIC AFFAIRS

No. 1058

EKO: ECONOMICS AND ORGANIZATION  
OF INDUSTRIAL PRODUCTION

No. 4, April 1983



FOREIGN BROADCAST INFORMATION SERVICE

#### NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

#### PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

18 July 1983

USSR REPORT  
ECONOMIC AFFAIRS

No. 1058

EKO: ECONOMICS AND ORGANIZATION  
OF INDUSTRIAL PRODUCTION

No. 4, April 1983

Except where indicated otherwise in the table of contents the following is a complete translation of the Russian-language monthly journal EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA published in Novosibirsk.

CONTENTS

Lenin Cited on Need to Learn Fundamentals of Management (pp 4-16) (O. R. Latsis)	1
Role of Fuel and Power Complex in National Economy (pp 17-32) (Yu. D. Kononov)	9
Effective Economic Contracts Require Better Enforcement (pp 33-48) (V. V. Laptev)	20
Various Forms, Advantages of Direct Production Contracts Examined (pp 48-58)	30
Readers Respond to Article on Economic Management Services (pp 59-78) (Ye. A. Skoblikov, P. G. Yefremov, M. Novikova, V. P. Moskalenko L. A. Fel'dbeyn)	38
Letters From Readers (79-80) (not translated)	
New Forms of Transportation Being Developed in Siberia (pp 81-93) (G. S. Migirenko)	53
Efficient Technology Dependent on Effective Decision Making (pp 95-102) (A. P. Altgauzen, V. A. Berzin, G. I. Orlov)	61

Role of Electrothermal Technologies Underlined (pp 102-111) (Ye. Lysaya)	66
Lags in Introducing Innovations, New Styles in Household Appliances & Consumer Goods Scored (pp 112-123) (A. M. Ilyshev)	73
Too Much Red Tape Hinders Introduction of New & Improved Consumer Goods (pp 123-134) (G. V. Rozenberg, V. P. Kovylin)	81
Styles, Range of Clothes & Accessories Need Improvement (pp 135-136) (A. Sultankulov)	87
Rapid Labor Turnover Decried (pp 137-150) (V. A. Skripov)	89
Hungary's Industrial Progress Highlighted (pp 151-163) (Z. Roman)	98
Book Reviews (pp 168-178)	106
Digest (pp 58, 94, 111, 163) (not translated)	
Accidents in Production (pp 166, 179) (not translated)	
Post Scriptum (pp 180, 186, 188) (Ye. I. Komarov, V. Tikhonov, K. Valeri) (not translated)	
In Preparation for Next Issue (p 190) (not translated)	



## LENIN CITED ON NEED TO LEARN FUNDAMENTALS OF MANAGEMENT

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 4-16

[Article by O. R. Latsis, doctor of economic sciences, Institute of Economics of the World Socialist System of the USSR Academy of Sciences (Moscow): "Learning to Work"]

[Text] The Leninist art of administration is an immense subject, and it cannot be exhausted either in a single magazine article, or in a book, or in several books. The study of the works of V. I. Lenin makes it possible to define a group of problems of economic administration which he himself considered to be key ones and decisive ones. They include the interconnection between the art of administration and the entire culture of the new society, the combination of centralism with "local" initiative, the role of planning and economic stimulation, and a correct relationship between economic and administrative methods of administration. All the subsequent decades of the development of the socialist economy has confirmed the correctness of Lenin's selection: this group of problems remain the main ones even today, and our party's attention is concentrated on them during the period of the changeover of the economy to the intensive path of development.

### The Question of The Entire Culture

"To study and to study more." Under what circumstances were these words pronounced? If one asks the modern reader to answer this question from memory, in the majority of cases his answer will be: In the report at the 3rd Congress of the Komsomol. This is what almost everybody remembers from school years. Yet these words were not included in that report. The meaning was, but it was expressed with different words. And these words were pronounced for quite a different audience, not at all a youthful one, and two years later: at the 4th Congress of the Komintern.\* At the 3rd Komsomol Congress Lenin said: "The task consists in learning" (Vol 31, p 298). From the recollections of Komsomol members of the 1920's it is known how these words impressed them. They, who had reached the heights of proletarian awareness and were prepared to die for the revolution at any minute, were told to learn. And not only Marxism, but they were supposed to master all the wealth of world culture, to master the achievements of bourgeois culture. This was a complete revolution in their consciousness.

\*Lenin, V. I. "Poln. sobr. soch." [Collected Works], Vol 45, p 293, Henceforth all references to this publication will be given directly in the text.

Of course, in our day this idea does not sound so earth-shaking: it has been explained to us since childhood. But Lenin's speech at the 3rd Komsomol Congress was neither the first nor the last occasion on which he appealed to the people to learn--he repeated this dozens if not hundreds of times in various circumstances. Let us recall only a couple of statements regarding this in order to clarify how profound and varied Lenin's idea of learning was.

So at the 3rd Komsomol Congress he appealed for learning in the most direct and widespread sense: sit at a desk and master the treasurehouse of world culture. Long before that, in an article entitled "Forthcoming Tasks of Soviet Power," the goal was set quite concretely: "To learn to work--Soviet power must set this task for all people in all of its immensity" (Vol 35, p 189). During these days Lenin called upon the people to learn to work in each working position, to master the leading devices of labor, utilizing such achievements of bourgeois science as Taylor's system, and to learn to work on the scale of the entire society: ". . . to teach workers the practical matter of administration of colossal enterprises and the organization of large-scale production and large-scale distribution" (Vol 36, p 263).

Finally, it was directly stated that it is necessary to learn to work from capitalists. Thus appeared the slogan: "To Learn Socialism From the Organizers of Trusts." The "leftist" communist Osinskiy tried to make fun of Lenin, but in the end Lenin made fun of him in the article: "On the 'Leftist' Childishness and Petty Bourgeois Attitudes" (Ibid, p 310).

That was the spring of 1918, a time of a brief interlude of peace that began after the signing of the Brest treaty, and Lenin's attention was concentrated on plans for economic construction. Intervention and civil war broke out, and for more than two years it was necessary to concentrate on something else. In the spring of 1919, in a brochure entitled "Successes and Difficulties of Soviet Power," he advanced to the foreground: learning to fight from capitalists. But Lenin explains right there: this is not only a military task, it faces us in all areas of public life and the national economy. Socialism will have to be constructed from those bricks that have been left by capitalism--this is the main idea of the brochure. It is necessary to take advantage of bourgeois specialists, including military specialists, and the workers and peasants must "adopt that which is valuable in capitalism, adopt all science and culture" (Vol 38, p 59).

In the political report to the 9th Party Congress, which took place in the spring of 1922, the subject of learning from capitalists was one of the main ones. It is worthwhile to quote extensively from this report:

"Here we are faced with the 'last and decisive battle,' here there can be no other evasions, neither political nor of any other kind, for this is a test of competition with private capital. Either we pass this test of competition with private capital, or it will mean complete collapse. We have the political power and heaps of all kinds of economic and other resources--anything you want--to pass this test, except ability. We do not have ability. But if we learn this simple lesson from the experience of last year and make it our guide for all of 1922, then we will overcome this difficulty in spite of the fact that it is much greater than the preceding difficulty because it is on us ourselves. This is not the same thing as any external enemy. This difficulty exists in that we

ourselves do not wish to recognize that unpleasant truth which has been forced upon us, and we do not wish to fall into the unpleasant situation into which we must fall: to begin to learn from the beginning" (Vol 45, pp 83-84).

This is an appeal not to youth, as in 1920, but to party members. And the appeal to learn was concretized: learn to manage. And in November of the same year the appeal to learn--to learn to fight for communism--was addressed no longer only to the Russian, but also to foreign communists who had gathered at the 4th Congress of the Komintern.

With the end of the war and the beginning of the new economic policy Lenin began to persistently remind people of how the issue was raised during the period of the first interval of peace. He reprinted an individual brochure of his work from the spring of 1918, writing in the forward that in this brochure ". . . the subject is an explanation of why at that time we placed priority (and are now placing priority) on the task of 'learning to work,' distributing people more correctly, establishing the individual responsibility of each for precisely specified work, attentively studying and examining practical work experience, and not rushing for 'new' plans of new institutions or a new statement of the matter, reorganization and so forth" (Ibid, p 169).

Developing his ideas about paths of socialist construction, Lenin also raises to a new level the understanding of the overall task of "learning to work." Now the most crucial slogan is to learn to trade. Here is one of the more typical statements regarding this:

"It is all a matter of being able to combine that revolutionary scope, that revolutionary enthusiasm which we have already manifested and manifested in a sufficient quantity and crowned with complete success, to be able to combine it (here I am almost ready to say) with the ability to be an intelligent and knowledgeable tradesman, which is quite sufficient for a good cooperator. By the ability to be a tradesman I mean the ability to be a cultured tradesman. Let a mental note be made of this by Russian people or simple peasants who thinks that once a person trades it means that he is able to be a tradesman. This is not at all true. He can trade, but it is a very long way from this to the ability to be a cultured tradesman. He trades now in the Asian way, but in order to be able to be a tradesman it is necessary to trade in the European way. An entire epoch separates one from the other" (Ibid, pp 372-373).

The words presented above are taken from an article entitled "On Cooperation," one of Lenin's famous last works. In this article Lenin shows especially clearly the broad understanding of economic tasks and their close interconnection both with state construction and with the rise of the cultural level of the main mass of the population. He writes:

"We have two main tasks that constitute the age. They are the task of reworking our apparatus, which is actually good for nothing and which we have taken over completely from the previous epoch; during five years of struggle we have not managed and could not manage to do anything serious here. Our second task consists in cultural work for the peasantry. And this cultural work among the peasantry, as an economic goal, pursues precisely cooperation" (Ibid, p 376).



In turn, reworking the staff in Lenin's understanding is also a task from the area of culture, one of those tasks which are included in the overall statement: learn to work. From Vladimir Il'ich's many statements it was clear that for him culture is education and the character of political life, and the organization of economic relations, and the way of life, including daily life. Typical in this respect is an entry in the outline for a speech which was not given at the 10th All-Russian Congress of Soviets because of illness. This outline was written practically during the same days as Lenin's last work, in December 1922. He indicates in a separate point:

"The state apparatus in general: is bad through and through; down with bourgeois culture.

('They were frightened' in 1917, in November); the question precisely of all culture, but to raise it requires years" (Ibid, p 441).

Here one is interested not only in the fact that in four lines he mentions culture twice, and also emphasizes: "the question of all culture." It is also interesting that this question is directly related to the question of the state apparatus and, moreover, to the question of the entire revolution. For what is in parentheses ("they were frightened" in 1917, in November) can mean only one thing: a recollection of the members of the Central Committee who left the government during the first days of the revolution, frightened essentially by the need to control the state without the "assistance" of bourgeois and reformist parties. They thought that the workers did not have enough culture to control the country.

Lenin did not close his eyes to the shortcomings of the workers who had just been liberated from the position of an oppressed class which was deprived of access to culture. In the article "Better Less, and Better" he wrote about workers who were struggling for socialism: "They would like to give us a better apparatus. But they do not know how to do this. They cannot do this. They have still not developed in themselves that culture which is necessary for this. And it is precisely culture that is necessary for this. Here nothing can be done high-handedly or with pressure, boldness or energy, or any other of the best human qualities in general" (Ibid, pp 390-391). But from this he did not draw the conclusion that the leading workers were incapable of controlling the state. The conclusion was different:

"Regardless of what we must set for ourselves the task of updating our state apparatus: in the first place--to learn, in the second place--to learn, and in the third place--to learn, and then to make sure that science for us has not been a useless thing or a fashionable phrase for us (and, one must admit, this happens especially frequently for us), that science has actually entered into our flesh and blood and become a complete and actual constituent element of life (Ibid, p 391).

#### The Strictest Unity of Will

If it was not easy for the masses of workers to recognize the need to learn from capitalists when arranging socialist production, it was perhaps even more difficult

to accept the need to combine the revolutionary "meeting" democratism with maximum centralization in production administration. And in this issue Lenin persistently, from year to year, revealed the content of his position, frequently defending it against ultra-left attacks.

Even in the "Forthcoming Tasks of Soviet Power" a good deal of space was devoted to clarifying the fact that large machine industry which comprises the material source and foundation of socialism requires unconditional unity of will, which directs the joint work of hundreds, thousands and tens of thousands of people. But how can one provide for the strictest unity of will?--asks Lenin. And he answers: by subjecting the will of thousands to the will of one. The subsequent clarification is very interesting:

"This subordination, with ideal awareness and discipline of participants in the overall work, can remind one more of the gentle guidance of a director. And if ideal discipline and awareness does not exist, it can assume the harsh forms of dictatorship. But in one way or another absolute subordination to a unified will is absolutely necessary for the success of the process of work which is organized according to the model of large-scale machine industry" (Vol 36, p 200).

In subsequent years Lenin returned to this idea dozens of times, constantly developing and deepening it, and frequently defending it against harsh polemics. His last statements regarding this are contained in the letter entitled "On Assigning Legislative Functions To the Gosplan."

Entering into the polemic on methods of the further activity of the Gosplan, Lenin writes: ". . . up to this point we have proceeded from the standpoint that the Gosplan should deliver the state critically developed material, and state institutions should resolve state problems. I think that with the present situation, when state affairs have become unusually complicated . . . it is necessary to take a step in the direction of increasing the authority of the Gosplan.

"I envision this step as being such that Gosplan decisions cannot be overturned under the usual soviet policy, but would require a special policy in order to be overturned, for example, bringing the question up at a session of the VTsIK . . ." (Vol 45, pp 349-350).

Such a decisive statement meant in practice that on behalf of strengthening the country's unified economic center Lenin was prepared to limit even the rights of the very agencies that managed it--the Sovnarkom and the Council of Labor and Defense.

The idea of creating a unified economic center for the country was not only extremely important, but also has retained its urgency in our day. Its significance has increased even more under conditions whereby the scale of the national economy has expanded extraordinarily, its branch structure has become more complicated and the coordination of departmental and local interests with general economic ones has become such a difficult and such a necessary matter. But still the interest of the modern reader in Lenin's letter about the Gosplan is in no way limited to this idea. Vladimir Il'ich breaks down into details

the issue of a correct relationship between the two bases--scientific and administrative--in the work of the managers of the Gosplan.

The immediate motivation for this was the criticism directed at the two managers of the Gosplan--Krzhizhanovskiy and Pyatakov. But the essential significance of Lenin's statements was immeasurably broader--they pertain not only to these people, and not only to the Gosplan. Having pointed out that both of these aspects--scientific and administrative--are necessary for management of such an organization, Lenin at the same time emphasized the subordinate significance of the administrative basis: "I think that such a person should have not so much administrative qualities, as extensive experience and the ability to draw people to himself" (Ibid, p 350). Later he returned again to this idea: "I think that here to exaggerate 'administrativeness' is just as harmful as any exaggeration in general" (Ibid, p 351). And a third time: "Such an institution cannot but be headed by an individual with a large amount of experience and a comprehensive scientific education in the area of technical equipment. The administrative power here should essentially be subsidiary. It is mandatory for the Gosplan to have a certain independence and autonomy . . ." (Ibid, p 352).

#### Satisfying The Needs of The Peasants

When investigating Lenin's approach to tasks of administration there is no way to get around his points about the role of nationwide accounting and control over the measure of labor and the measure of consumption. Here it is very important to clarify the precise meaning with which Lenin invested these words. In the narrow sense one can reduce control to administrative measures alone, and accounting can mean only bookkeeping or warehouse accounting. Lenin's understanding was undoubtedly considerably broader.

Even in the early works of Vladimir Il'ich, written long before the revolution, for example in "The Development of Capitalism in Russia," one encounters concepts of "social accounting" and "social control" (see Vol 3, pp 310, 547). But social accounting under capitalism is a quantitative and qualitative evaluation of the product by the consumer on the market in the process of commodity and monetary relations (see also Vol 1, p 425). Despite the successful fulfillment of the task of "learning socialism from the organizers of trusts" in a number of areas, in the question of social accounting and control the search for forms that were adequate to socialism initially caused serious difficulty: Marxism of the pre-October age denied the possibility of commodity and monetary relations under the conditions of socialist construction, and these ideas were retained during the first four years after October. Later, in 1921, one hears for the first time "autonomous financing." In the same year Lenin drew a conclusion about the possibility and the need for utilizing commodity and monetary relations. And in the spring of 1918, although on the whole the economic policy was turning in the direction that was realized only after the civil war, still this was a "general, indefinite idea" "still a very murky idea" (Vol 45, pp 281, 282). But in economic policy the proclamation of the most correct principles in and of itself, as distinct from economic practice, does not make a great deal of difference. A manager who deeply understands the course of public production in all of its interconnections is capable, even before the theoretical arrival



at a new truth, of intuitively acting in the correct direction. A scholastic, on the contrary, even knowing the new slogan, operates essentially in the old way.

Thus even in 1918 Lenin directly related accounting and control to the quality of monetary circulation: ". . . organize right down to the last person, organize accounting for production, organize accounting and control over consumption, and make sure that we don't produce hundreds of millions of rubles from the printing press, and that not a single 100-ruble note, which has wrongly fallen into somebody's hands, does not return to the state treasury. This cannot be done with any revolutionary explosion, any final blow to the bourgeoisie. This can be done only with self-discipline, only with organization of worker and peasant labor, only with accounting and control" (Vol 36, p 263).

Conversely, one encountered managers who even after the beginning of the new economic policy held to the conviction that monetary circulation is not an objective process that reflects the condition of social accounting and control, but something under the simple command of the administrator. We know, for example, about the dispute that took place at the end of 1922 concerning the program for the repair and construction of naval ships. Lenin demanded that the program be cut off, taking into account the critical shortage of funds in the state budget, and that the released money be used for the needs of the schools (which was finally done). After Vladimir Il'ich refuted the conclusions of the military department, Kamenev advanced new economic factors in favor of retaining the previous allocations: he declared that the orders of the fleet should support the metal industry. Lenin answered that the orders granted to the metal industry should be used "for the satisfaction of the peasants' needs, and in no way for such a thing as a fleet" (Vol 45, p 313). At the end of the letter he again persistently demanded: "To calculate the way in which we can now begin to transfer a designated quantity of our ship repair plants over to metal items that are needed by the peasantry" (Ibid).

Here it is important to keep in mind a circumstance which was undoubtedly comprehensible to participants in the polemic: they were speaking not only about various directions for the utilization of funds, but also about various sources for acquiring them. In order to pay for the orders for the fleet the state had to obtain funds through taxes or emissions. Either one would mean unreimbursible withdrawal of funds from the main mass of the population, that is, the peasantry. And the orders of this same peasantry for agricultural machines and equipment had to be paid for voluntarily, on the market, giving money which was certainly not unreimbursible and which had advantage for their farm.

The approach which reflected Kamenev's position involved an immense danger to the unsteady socialist economy. True, at that time it was still perhaps not clear how close this danger was. Lenin could proceed not from the facts of economic life whose threatening totality was revealed somewhat later, but from the overall political situation at the "juncture"--it gave a reliable compass for concrete economic decisions as well. And today's historian knows that at that time in the national economy there was a most critical conflict, which reached its greatest peak after Lenin left practical work, at the end of 1923,

and subsided in 1924. There was a crisis in the sales of industrial products which struck the metal industry especially severely. Managers of this branch later, in 1923, concentrated all their efforts on "knocking out" state orders--they considered this path to solving the problem to be easier than to work on the open market. State orders for metal items were concentrated primarily in two departments--military and transportation. At that time F. E. Dzerzhinskiy, who was in charge of transportation, spoke against the close-handed policy of the managers of the metal industry. He underook his analysis in the same area as Lenin did. Almost a year later, after the publication of the aforementioned letter by Lenin, Dzerzhinskiy turned to the Council of Labor and Defense with a note about the metal industry. It said, in particular: "Thus the policy of our metal industry consists in organizing the sale of their items to the population and forcing them on the state, and because of precisely this policy the metal industry is falling into an inescapable contradiction: the population does not purchase items since they are too expensive and the state cannot order as much since the population is too poor to give the state the money for this."\* By that time it was clear how destructive this course was for the industry itself. At Dzerzhinskiy's suggestion decisions were made which made it possible to sharply expand the sales of metal items to the peasantry. The correctness of Lenin's words were again confirmed: "... we can control only when we correctly reflect what the people recognize" (Vol 45, p 112).

It is necessary to learn to work today no less than in the past. This will probably always be necessary. But, of course, the conditions and possibilities of learning change. In the first years of soviet power it was necessary to learn from bourgeois specialists and from industrially developed capitalist countries. Today, without rejecting the experience of the best capitalist enterprises, we are learning primarily from our own rich experience--past and present, and we are learning from the experience of the socialist countries. Without going into the interesting and complicated questions that arise from a study of modern economic mechanisms of the fraternal countries, let us note that here above all arises the problem of optimally combining centralism with local initiative--a problem which was first raised and first began to be solved by Lenin. We are learning from everyone who is able to work well, and we always learn from Lenin, being unwaveringly convinced of the timeliness of his lessons in socialist economic administration.

---

\*Dzerzhinskiy, F. E. "Izbrannyye proizvedeniya" [Selected Works], Vol 1, Moscow, 1977, pp 368-369.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111

## ROLE OF FUEL AND POWER COMPLEX IN NATIONAL ECONOMY

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 17-32

[Article by Yu. D. Kononov, candidate of economic sciences, Siberian Energy Institute of the Siberian Branch of the USSR Academy of Sciences (Irkutsk): "The Fuel and Energy Complex in the System of National Economic Ties"]

[Text] Since the beginning of the 1970's in our country and abroad there have been cases and tendencies that bear witness to the beginning of a new stage in the development of energy engineering.\* Its uniqueness consists in a changeover from preferential utilization of inexpensive petroleum to energy resources that are more expensive, but not in such short supply. The changeover is accompanied by an essential growth of capital- and material-intensiveness of the fuel and energy complex (TEK) and a strengthening of its influence on other branches of the national economy.

### Power Engineering and Economics

The scale of development and the composition of the sectors of the economy, technologies for the production of industrial products, and the standard of living of the workers--all these not only determine the national economy's overall need for energy, but also essentially influence the internal structure of the complex. In turn, the structure of the TEK and the rates of its development exert an influence on the development and distribution of many industries and on the rates and proportions of the economy as a whole (see Figure 1).

Its influence is formed primarily through the system of material production ties of the complex with the related branches. The TEK is a large consumer of goods and services of many branches. On the activity and development of the complex we directly expend 6-8 percent of the gross machine building output, 10-12 percent--of ferrous metallurgy, and 11-13 percent of construction materials. And taking into account the material expenditures in the related branches, the proportion of the TEK and the consumption of individual kinds of industrial products increases 2-4-fold.

\*For more detail see: Makarov, A. A., Melent'yev, L. A. "Problems and Paths of Development of Energy Engineering in the USSR," EKO, 1981, No 3.

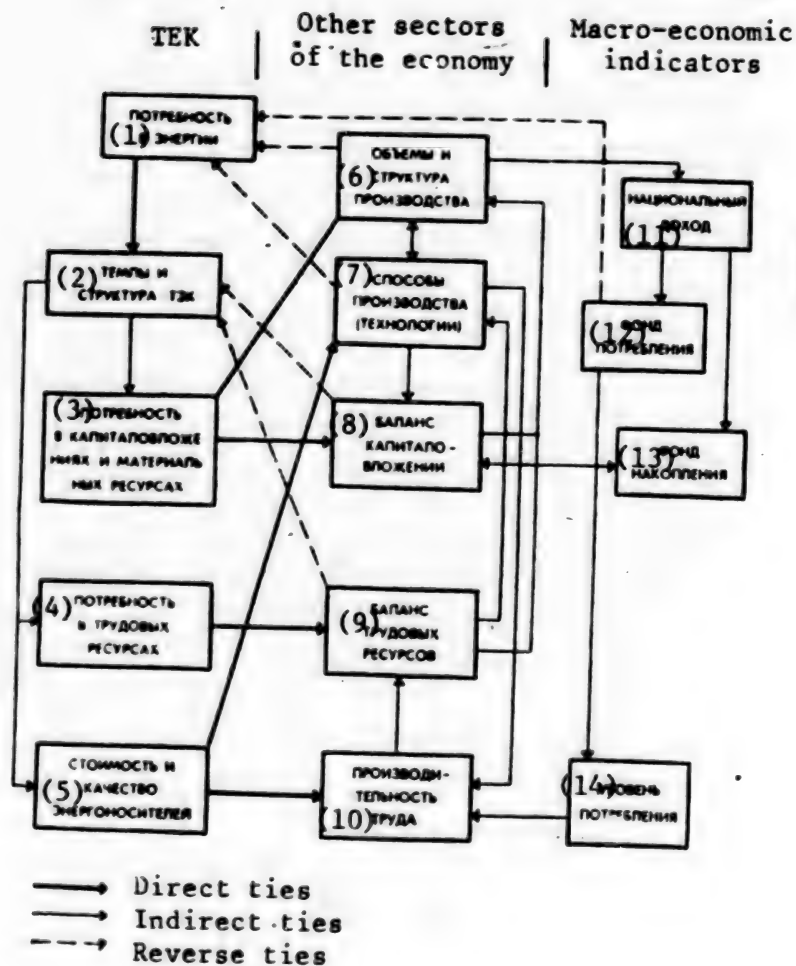
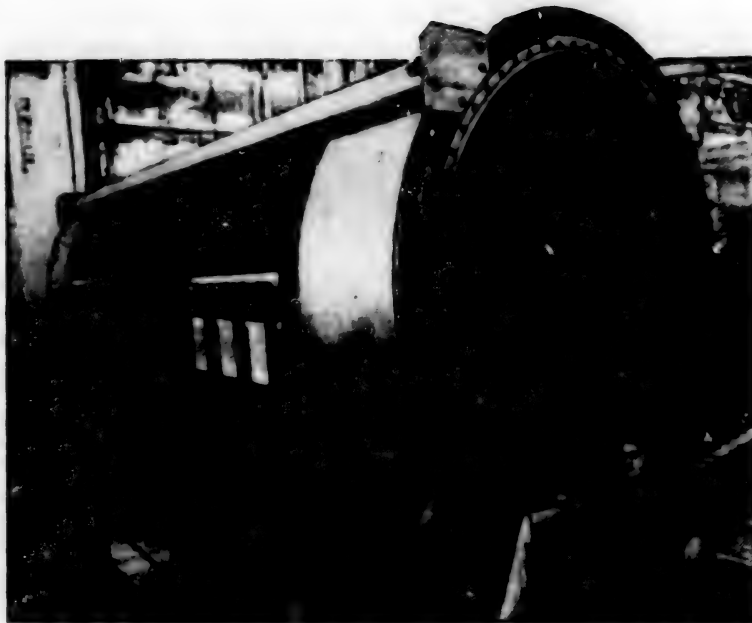


Figure 1. Interconnections of Fuel and Energy Complex and National Economy

Key:

- |  |                                   |
|--|-----------------------------------|
| 1. Demand for energy                                   | 8. Balance of capital investments |
| 2. Rates and structure of TEK                          | 9. Balance of labor resources     |
| 3. Need for capital investments and material resources | 10. Labor productivity            |
| 4. Need for labor resources                            | 11. National income               |
| 5. Cost and quality of energy bearers                  | 12. Consumption fund              |
| 6. Volumes and structure of production                 | 13. Accumulation fund             |
| 7. Means of production (technologies)                  | 14. Level of consumption          |



A half million kilowatts--such is the capacity of the TVM-500 turbogenerator being created at the Sibelektrot'yazhmash plant. It can provide 1.5 times more voltage than the preceding class of machines could. In the photo: The new turbogenerator being assembled.

The complex has a great influence on the work of transportation. About one-third of the cargo shipped on the railroad is coal and petroleum products. In maritime shipments the proportion of fuel cargos reaches 47-49 percent.

Most of the increase in the consumption of industrial products in the TEK goes for capital construction. Even now about 40 percent of all the capital investments in industry and more than 15 percent of the gross capital investments in the national economy go for the development of the fuel industry and electric power engineering, and with time these figures can increase.

One should also take into account the large capital expenditures on energy in the branches that are not part of the TEK. Departmental boilers and small electric power stations still absorb approximately 2.5-3 million rubles annually, and for the acquisition of equipment that uses energy and fuel and the development of other elements of energy in industry, construction, transportation and agriculture we spend, according to the estimate, 7-9 billion rubles a year (see Table 1).

Capital investments in the development of branches that directly or indirectly provide the TEK with goods and services are also significant. According to our estimate, they reach 4-5 billion rubles a year. Related investments are distributed among the branches of the sphere of material production as follows: nonferrous metallurgy--17 percent, ferrous metallurgy--15 percent, machine building--14 percent, the chemical industry--9 percent, the construction industry



and the construction materials industry--21 percent, rail and automotive transportation--15 percent, and other branches--10 percent.

Table 1. Capital Investments and Number of Workers in USSR Energy Sphere in 1980, Estimate

	Capital investments, billions of rubles	Number of workers, millions
Production, transformation and distribution of energy resources-- total	22.5-23.0	6.0-6.4
Including:		
Fuel and energy complex	20	2.9
Departmental electric power stations and boilers	2.5-3.0	3.1-3.5
Related branches that provide for functioning and development of TEK*	4-5	5.5-6.5
Energy industry of consumers**	7-9	3.5-4.1
Total	33.5-37.0	15.0-17.0

\*Expenditures on geological prospecting, extraction, processing and transportation of fuel along pipelines are taken into account.

\*\*General purpose transportation, construction, sales organizations that serve branches of industry. Expenditures are taken as proportional to the TEK's share in the consumption of their goods and services.

Related capital investments, like indirect material expenditures per unit of growth of energy resources, depends strongly on the rates of development of the corresponding branches of the TEK and the increase in direct capital investments. When these rates increase there is a need for prompt and additional development of an increasing number of related industries, and the role of more remote levels of relationships increases. In principle related capital investments can reach 25-30 percent of the direct capital investments in the complex.

The high capital-intensiveness of the fuel industry and electric power engineering and their close production ties with fund-forming branches of industry, the lengthy time periods for the construction of energy facilities, the creation of elements of the infrastructure and enterprises of related branches give rise to the complex's strong inertia. It is manifested in particular in the impossibility of sharply changing in a short period of time the composition of production capacities in individual branches of the TEK and the structure of the country's energy balance. Therefore it is necessary to promptly develop new fuel and energy bases and sources of energy even if in the initial stage they are not as economical as energy resources that have been previously assimilated but are being exhausted.



One should especially take note of the role of the fuel and energy complex in the country's labor balance. About 3 million people are employed in the fuel and energy complex, and taking into account decentralization of the supply of electricity and heat, this figure more than doubles. If one adds to this labor expenditures on the production of products that are consumed by the complex and also the service of energy enterprises for consumers of energy, the overall number of workers involved in the production, transportation and consumption of fuel and energy reaches 15-17 million people, or 15-17.5 percent of those employed in the sphere of material production. But the influence of energy on the labor balance is determined not only by its proportion of the labor resources, but also by the role of the energy base in general and electrification in particular in increasing the productivity of public labor.

Variants of the development of the TEK thus exert an appreciable influence on the overall demand of production for material resources and capital investments, and also on the labor balance. All this, in turn, is reflected in the volumes, structure and means of production of products in practically all branches of the national economy.

Expenditures on fuel and energy are also increasingly influencing the development of the sphere of material production. The increased expense of energy bearers is reflected directly in the technical and economic indicators of production, causing an increase in production costs. On an average for industry the energy constituent in the production cost is equal to approximately 6 percent, and reaches 10-13 percent in metallurgy, chemistry and the construction materials industry. Energy's proportion is even greater in the operational expenditures for transportation.

The change of the ratio in the cost of individual energy bearers and the relatively increased expense of energy resources as compared to other production factors contribute to a changeover to new technological processes. And this is related, in particular, to the change in labor expenditures and capital investments in the creation and operation both of enterprises as a whole and of their energy facilities. As a rule, there are changes in the expenditures on raw material, the nature and speed of the production processes and the quality of the products.

Increased prices for fuel and energy consistently bring about a replacement of one energy bearer with another at first, and then a compensation for the shortage of energy with other production factors and, finally, a crowding out of energy-intensive kinds of products with those that are not energy-intensive. The economy reacts to absolute or relative increases in the cost of energy fairly slowly since even a simple replacement of energy bearers requires 2-4 years, a replacement of technologies--7-9 years, and a restructuring of industrial production--more than 10 years.

The cost and availability of energy has an essential influence on the distribution of productive forces. Moving energy-intensive industries into the regions of Siberia, where total expenditures on fuel and electric power are lower than in the European part of the country, is reflected in the development of transportation, the raw material base, the nonproduction infrastructure and the change in the balance of labor in individual regions. All this, in turn, exerts a reverse adjusting influence on the development of energy engineering.

The TEK is the largest source of currency income. About 78 percent of the exports of energy resources are petroleum and petroleum products. Income from the sale of energy resources makes it possible to import those kinds of equipment and materials which contribute to eliminating the "bottlenecks" in the economy and accelerating the development both of the fuel and energy complex itself and of other branches of the national economy.

The development of the TEK indirectly influences other branches through its influence on the atmosphere, hydrosphere and lithosphere. Electric power stations, boilers and heating installations occupy a large place among the sources of pollution of the atmosphere with sulphur oxides and nitrogen, and also solid particles. The links between the complex and the environment and the economy as a whole are also manifested through mass consumption of water by thermal and atomic electric power stations, through the removal of land in order to expand the extraction of coal, and the construction of large GES's on planes, electric power transmission lines and powerful gas and petroleum pipelines.

The increasing influence of energy engineering on the environment makes it necessary for state control of its condition. Ecological requirements are increasingly effecting the development of the TEK, the structure of production of primary energy resources, the concentration of individual energy sources, and the distribution and technology of energy facilities.

The total influence of variants of the development of the TEK on other branches of the sphere of production through the system of interbranch, foreign trade, ecological and other ties, in the final analysis, can be reflected in the amount and structure of the national income. In particular, the more rapidly the direct and indirect needs of the complex for capital investments grow, all other conditions being equal, the less the resources that can be allotted for the development of other spheres of the national economy. The influence of the development of the TEK on individual branches and the national economy as a whole can be reflected through reverse ties in the rates and structure of the complex itself if the needs of the economy for energy resources or the volumes of limited national economic resources used for energy engineering change.

Only certain of the interconnections between energy engineering and the economy that were described can be given a prognosticatory quantitative evaluation. In particular, the Siberian Energy Institute of the Siberian Branch of the USSR Academy of Sciences, with the help of a system of economic and energy models, investigated the possible national economic consequences of the increased capital- and material-intensiveness of the TEK.

#### Factors and Consequences of Increased Capital-Intensiveness of the TEK

The shift of the centers for the extraction of fuel to the eastern regions of the country, the withdrawal of existing production capacities in the fuel branches, and their replacement with initially less economical, newly assimilated deposits--all this brought about a tendency, approximately in the middle of the 1970's, toward increased expenditures on the production and transportation of fuel. According to estimates, the capital-intensiveness of petroleum will

increase by an average of 5-6 percent per year, and natural gas--by 3-4 percent. The tendency toward increased capital-intensiveness of new construction is also to be found in the coal industry. This is counteracted by the expansion of open-pit mining, which requires one-fourth-one-eighth the amount of capital investments that underground mining does. But then there are increased capital investments in improving and transporting the coal.

The differences in the growth rates of capital-intensiveness of new capacities change our ideas about how relatively economical various kinds of fuel are: before the beginning of the 1970's the most capital-intensive fuel was coal; between 1975 and 1990 it was natural gas (taking into account expenditures on gas lines); and after 1990 it will be petroleum. In the distant future it is possible that the capital-intensiveness of coal will be five-ninths-one-half the capital-intensiveness of natural gas and two-sevenths-one-fourth that of petroleum.

The growth of the capital-intensiveness of liquid fuel is slowing down significantly only when compared with expenditures by the consumers of natural and synthetic petroleum, and we are beginning to produce liquid fuel on a large scale from coal and shale. But it is expected that the capital-intensiveness will stabilize at a high absolute level since now the proportional capital investments in the production of artificial liquid fuel are considerably greater than in the extraction of petroleum. This is also shown by foreign figures concerning capital investments in various sources of liquid fuel (in percentages of the indicators of large deposits with favorable conditions for extraction):

Average and small deposits with unfavorable conditions for extraction	250-350
Especially unfavorable conditions for extraction (polar regions, extraction at great depths in the seas)	450-850
Heavy petroleum, sand containing petroleum	340-500
Bituminous shales	370-550
Petroleum from coal	500-875

In electric energy the capital-intensiveness will increase much more slowly than in the fuel industry, in spite of the considerable increase of the proportion of atomic electric power stations in the structure of the capacities that are being introduced, the cost of the atomic stations is greater than the cost of stations that use organic fuel. The main factors that will keep energy construction from becoming too expensive in the next 20 years will be the further increase in the unit capacities of basic and auxiliary equipment and stations as a whole, the startup of less expensive maneuvering electric power stations, the introduction of new technological decisions, further industrialization and increased labor productivity in the construction of stations and networks. But at the end of the 20th century the influence of factors that increase the capital-intensiveness of electric energy will be even more appreciable: complication of conditions for the selection of sites for large electric power stations, the advancement of energy construction into the northern regions, the more rigid norms for the discharge of harmful substances into the atmosphere, increased expenditures on environmental protection measures, and so forth. The construction of breeder reactors and also hybrid thermonuclear reactors can have an affect on the accelerated growth of proportional capital investments at the beginning of the next century. It is expected that they will be more expensive than ordinary atomic power stations.

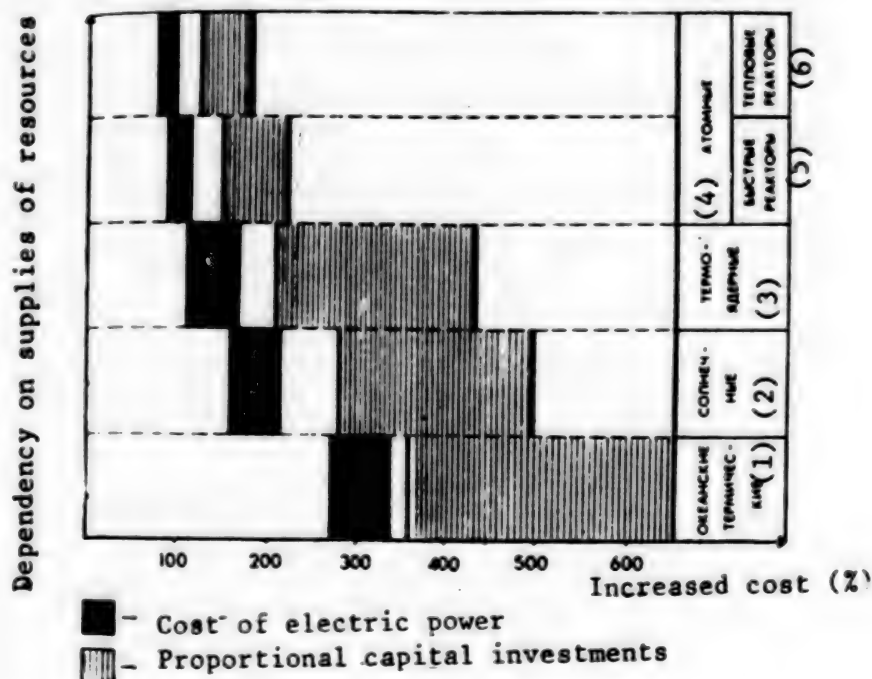


Figure 2. Relative Dependency on Fuel Supplies and Cost of New Types of Electric Power Stations and the Electric Power They Produce (KES Using Coal = 100%)

Key:

- |                  |                     |
|------------------|---------------------|
| 1. Ocean thermal | 4. Atomic           |
| 2. Solar         | 5. Rapid reactors   |
| 3. Thermonuclear | 6. Thermal reactors |

A comparison of the economic indicators of various types of electric power stations (see Figure 2) shows that a changeover to new, less limited primary energy resources leads, as a rule, to increased capital-intensiveness of electric power. This tendency is also typical of energy as a whole and reflects the process of replacing fossil fuels with other natural and economical resources during the course of scientific and technical progress. An example of this is thermonuclear energy which in principle is capable of eliminating man's dependency on supplies of traditional energy resources, but will require a sharp increase in the production of a number of nonferrous and rare metals which are limited according to today's ideas. Thus, according to foreign data, in order to construct thermonuclear reactors with an overall capacity of 100 million kilowatts (15 percent of the installed capacity of electric power stations in the United States), it is necessary (in percentage of the modern level of consumption in the United States) to have: titanium--10 percent, molybdenum--20 percent, vanadium--30 percent, beryllium--100 percent, niobium--350 percent, and lithium--300-400 percent.

A considerable expansion of the extraction of these and other raw material resources for large-scale development of new sources of energy, in turn, will depend largely on the availability and cost of energy. Thus in the future the



interconnection between energy engineering and the production of raw material resources will be even stronger.

The increased capital-intensiveness of energy production and cost of organic fuel will require more efficient utilization of energy resources and a radical improvement in the structure of the country's energy balance. A reduction of the proportion of petroleum, and later that of natural gas, and an increased proportion of coal (including that which is processed into artificial liquid fuel) and especially atomic energy will make it possible to reduce the needs of the TEK for capital investments. Only as a result of increasing the proportion of AES's in the overall production of energy resources 20 to 30 percent will it be possible to reduce the average annual rates of increase in capital investments in the TEK by 1-2 percent.

But still, as analysis shows, the rates of capital investments will apparently exceed the growth rates of the needs of the national economy for energy resources 1.5-fold; the difference becomes greater as the demand for fuel and energy increases more rapidly. Two prognosticatory variants with relatively high and relatively low rates of development of the TEK clearly show this dependency. Taking into account the complicated interconnections between capital-intensiveness, rates of development of the TEK and its production structure, the structure of capital investments can take various forms (see Table 2).

Table 2. Structure of Capital Investments in TEK, Depending on Possible Rates of Its Development, % of Total

Branches of TEK	Reduced Rates	Increased Rates
Electric and thermal energy	30	50
Petroleum and petroleum processing industry	33	10
Gas industry	17	13
Production of artificial fuel	5	11
Coal industry and others	15	16

The increased capital-intensiveness of the TEK and the complex's increased proportion of the consumption of national economic resources that is related to it can have a negative effect on the rates of the national income.

The influence of changes in the structure and capital-intensiveness of the TEK on the macro-economic indicators depends essentially on the conditions for the development of the national economy: it is stronger when the processes of intensification are slower and there is less efficiency and flexibility in the economy. Thus an increase in the complex's proportion of the gross capital investment because of a deterioration of the conditions for its development of 2-3 percent practically does not affect the rates of economic growth if the

overall economic situation is favorable. With more rigid limitations on the structure of production and consumption of the social product, because of the reduced possibilities of maneuvering national economic resources and the poor effectiveness of their utilization, the average annual growth rates of the national income can decrease by 0.1-0.15 points, and the consumption fund, because of the need to raise the norm of accumulation, can decrease by 0.3-0.4 points.

But one should keep in mind that increased efficiency of public production will contribute to economizing on energy resources and thus compensate additionally for the negative consequences of their increased cost. A reduction of the energy-intensiveness of the national economy as a result of changes in the structure and efficiency of material production, because of economical utilization of fuel and energy, is becoming a means of counteracting the increased cost of energy resources.

#### Paths To Reducing The Energy-Intensiveness Of The National Income

The energy-intensiveness of the national income in terms of the gross expenditures of primary energy resources will serve as a comprehensive, synthetic indicator that characterizes the proportion of the development of energy engineering and of the national economy. The dynamics of this indicator reflect the directions for the improvement of energy and factors in intensification of production: reduced material-intensiveness, increased output-capital ratio, improved quality of industrial products and their service lives, improved distribution of productive forces and the structure of transportation, radical improvement of production organization and so forth.

A special role among the aforementioned factors is played by the material-intensiveness of industrial products. Its influence on the energy-intensiveness of the national income is explained by three factors:

a direct reduction of expenditures of fuel and energy in the branch for processing material per unit of prepared products;

reduced demands for products of raw material and other branches that directly or indirectly react to the reduction of material-intensiveness;

increased national income as a result of the positive influence of economizing on material resources on production efficiency.

As calculations show, an increase in the rates of reduction of material-intensiveness in machine building of 1 percent produces a reduction of the energy-intensiveness of the national income of no less than 3 percent. Approximately 60 percent of the effect is brought about by a reduction of the absolute amount of energy consumption and 40 percent by an increase in the national income.

As a result of reducing material-intensiveness and increasing the efficiency of production it is thus possible to obtain a considerable relative savings on energy resources in the national economy. There is also a reverse connection--the efficiency of public production increasingly depends on how intensively and successfully an energy saving policy is conducted.



Calculations show that if by making additional capital investments in energy-saving measures one provides for an annual reduction of the energy-intensiveness of the national income of only 1 percent as compared to the predicted tendency, it would be possible to reduce the proportion of the TEK in the gross capital investment by 2-3 percent and increase the average annual growth rates of the nonproduction consumption fund by no less than 0.15-0.2 percentage points.

With an expansion of the scope of economizing on energy, we shall use capital-intensive technological processes and means of salvaging secondary energy resources, reducing losses of energy, and so forth. There will be a corresponding increase in the proportional capital investments per unit of saved energy resources while each individual energy-saving measure will save less and less expensive energy resources. Therefore for each time interval one can indicate efficient boundaries for economizing on energy and reducing the energy-intensiveness of the national income. In terms of reference evaluations, the optimal average annual rates of reduction of the energy-intensiveness of the national economy in terms of primary energy resources lies in the range of 1.2-1.9 percent. The absolute amounts of energy consumption by the beginning of the next century will be 15-20 percent less than they will if the existing tendencies remain. It will be possible to release large capital investments intended for the TEK and use them in other branches of production. The limitation of the extraction of fuel resources from the earth and the relative reduction of harmful discharges from energy enterprises will create prerequisites for maintaining the ecological balance. The effectiveness of the TEK and of the entire national economy will increase.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111

## EFFECTIVE ECONOMIC CONTRACTS REQUIRE BETTER ENFORCEMENT

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 33-48

[Article by V. V. Laptev, corresponding member of the USSR Academy of Sciences, Institute of State and Law of the USSR Academy of Sciences (Moscow): "The Economic Contract as a Planning Instrument"]

[Text] Increasing the role of the economic agreement at all levels of management activity was named in the decisions of the 26th CPSU Congress as one of the most important areas for improving the economic mechanism. Our magazine has already addressed this problem (see, for example, the article by L. I. Mokeyeva, "Evaluation of the Operation of Enterprises Taking Into Account the Fulfillment of Agreements: Unsolved Problems," No 3, 1982).

Experience indicates to us that increased effectiveness of contractual ties is possible only with a combination of economic, organizational and legal measures. Today we are offering for the readers' attention two articles by lawyers with their terminology and argumentation. The editorial staff hopes that production workers will continue to discuss such an important subject.

The most widespread kind of economic agreement is the delivery agreement. It involves practically all organizations that play the roles whether of suppliers or clients for products. It is precisely here that the typical features of all economic agreements are most clearly expressed.

### The Agreement And The Plan

The functions of the economic agreement are constantly being developed. Traditionally, the agreement was regarded as an instrument for regulating commodity and monetary property relations. Under the conditions of socialism economic relations assume a planned nature; they are not simply property relations. The economic agreement between socialist organizations is concluded on the basis of the plan.

The decisions of the 26th Party Congress point out that it is necessary to utilize the economic agreement more extensively when forming the plans for the production and sales of consumer goods. In July (1979) the decrees of the CPSU Central Committee and the USSR Council of Ministers envision that the annual plans for the enterprises and production associations with respect to product lists and assortment of products that are produced should be drawn up in keeping with economic agreements that have been concluded. Consequently, the economic agreement precedes the plan here and is the basis of the plans for the enterprises and associations.

With any system of planning, even the most rigid, the planning assignment establishes far from all indicators of economic activity. Many of them are determined by the enterprises and associations themselves, which are acting not only as objects, but also subjects of planning. In cases where the interests of the consumers are involved the economic agencies do not plan their activity unilaterally, but coordinate it when concluding economic agreements.

Being a part of planning, the agreement in some cases concretizes the plan, and in other it forms it. Under modern conditions the traditional idea that the plan always precedes the agreement has become outdated. Now the economic agreement is becoming a joint planning decision which determines the production program of the organizations that conclude it. Consequently, the plan and the economic agreement should be legislatively regulated on a unified basis.

But these tendencies have not been adequately reflected in legal science. Up to this point old ideas about the economic agreement as a regulator only of commodity and monetary relations are still alive. According to the ingrained tradition, the economic agreement is frequently interpreted as a civil-legal institution, and the plan is related to administrative law. This approach impedes the utilization of the economic agreement in planning. Only a unified approach to the plan and the agreement will make it possible to successfully realize the planning function of the economic agreement.

The development of this function under the conditions of mature socialism is explained by the fact that planning is oriented to an ever-increasing degree toward the achievement of the final economic results, and these results are expressed in the fulfillment of contractual commitments. The utilization of the economic agreement makes it possible to take into account the needs of the national economy and the population better when planning economic activity.

#### The Content Of The Economic Agreement

Not only the interests of the organizations that conclude the agreement, but also economic legislation and planning documents that are approved by the central administrative staff of the national economy affect the content of the economic agreement.

The policy for concluding and implementing economic agreements is regulated by numerous normative acts that are published for individual kinds of agreements.

Thus on the basis of the decisions of the 26th CPSU Congress legislation concerning deliveries was updated, and two fundamental normative acts that regulate deliveries were published: the provisions concerning deliveries of products for production and technical purposes and the provisions concerning deliveries of consumer goods. On the basis of these numerous departmental normative acts are published, which determine the conditions in greater detail and take into account the peculiarities of the delivery of individual kinds of products and goods. Legislation concerning economic agreements comprises an important part of economic legislation, on whose condition the success of contractual work largely depends.

Many conditions of economic agreements are predetermined under a planned policy. And this pertains not only to production plans, but also to plans for material and technical supply and sales of products. There is an entire system of planning documents here--funds, orders and attachment plans which are mandatory for concluding economic agreements. Agreements can be concluded for distributed products only on the basis of a planning document for distribution, and the violation of this rule entails a fine in an amount of up to 100 percent of the value of the products that are delivered.

And the planning document for the delivery creates not only the right, but also the responsibility to conclude an agreement and subsequently deliver the product. This obligation arises only for the supplier, and not for the consumer who can, when concluding the agreement, reject the product that is allotted to him. In this case the economic agreement acts as an instrument for correcting an erroneous planning document. If the matter involves the delivery of products for production and technical purposes, the client is not obligated to justify his refusal to conclude an agreement. But if consumer goods are being delivered, if a dispute arises, he must prove that the corresponding goods are superfluous or unnecessary. This difference is explained by the fact that the clients of consumer goods are not the final consumers, but wholesale trade organizations which can refuse to receive certain goods that are not advantageous for them, for example, cumbersome goods or ones which require special storage, even though the population needs these goods. In such cases the state arbitration board, defending the interests of the consumers, can make it incumbent on the client to conclude an agreement to receive the goods.

Effective utilization of the economic agreement in planning requires expansion of the rights of the enterprises and associations when concluding agreements. On the basis of the plan, the parties to the agreement should have the opportunity to determine independently not only the list and assortment of products that are to be produced, but also many other conditions of economic interrelations.

Centralized administration of the economy should be combined with economic independence and initiative of the enterprises and associations. This is reflected in the relationship between centralized planning and the rights of enterprises and associations when concluding economic agreements. These rights are predetermined both by the list of products that are distributed on the basis of planning documents for material and technical supply and by the system of directive planning indicators that are established for the enterprises and associations.



The system of directive indicators applied during production planning was established in the July (1979) decree of the CPSU Central Committee and the USSR Council of Ministers concerning improvement of the economic mechanism. The decree envisions delimitation of the competence of higher planning and economic agencies in questions of planning, on the one hand, and those of the enterprises and associations, on the other. But the establishment of a system of planning indicators in legislation does not resolve all problems in and of itself. Above all, the list of directive indicators is extremely detailed, which impinges upon the economic independence and initiative of the enterprises and institutions. Further, the envisioned indicators are not always met in practice. There are cases where the indicators established for the enterprises and associations are not included in the directive ones and their rights are violated, which is forbidden in the decisions of the 26th Party Congress. Consequently, it is necessary to develop a legal mechanism that prevents such phenomena.

It is important not only to have good legislation, but also to have efficient application of the laws in the area of economic relations. When there are violations of commitments under the economic agreement in relations along the horizontal, the enterprises and organizations can turn to the arbitration board and have their rights restored. But legislation does not stipulate how to restore the rights of the lower units if they are violated by higher planning and economic agencies. This is one of the reasons for violations of the law in the sphere of administration and planning of economic activity.

Yet the decisions of the 26th CPSU Congress point out the need for strict observance of socialist laws in economic relations. It seems that in order to meet this requirement it is necessary, in addition to strengthening the functions of the procurator's office, to instruct a particular state agency, for example, the state arbitration board, to exercise control over the legality of acts of economic administration. Only this way will it be possible to ensure efficient and effective utilization of the economic agreement, since contractual relations can be violated, and indeed frequently are violated, by illegal instructions from higher planning and economic agencies.

Strengthening the role of state arbitration, in controlling the legality of economic relations is envisioned in the Law Concerning State Arbitration in the USSR which was adopted in November 1979. Article 19 of the law stipulates that arbitration should reject the demands of parties that are based on acts of state administrative agencies which stand in contradiction to legislation. One of the examples of this activity of arbitration is control over the legality of changes in production plans which make it necessary to change economic agreements. According to point 19 of the new provisions concerning deliveries of products for production and technical purposes, in the event that changes are made in the production plan in violation of the established policy, changes are not made in the planning documents for the delivery of products or in the agreements, and the suppliers are not relieved of responsibility for fulfilling their contractual commitments. Even previously in practice arbitration boards exercised control over the legality of changes in production plans that made it necessary to change agreements, and when there was an illegal change in the plan (for example, without the agreement of the fund holder or the client), the agreement concluded on the basis of the initial plan was recognized as retaining its validity.

At the same time the function of the state arbitration board for controlling the legality of acts of economic administration should be defined more broadly. In our opinion, the arbitration board should exercise this control not only when resolving disputes regarding economic agreements, but also in other cases. This will help to carry out the tasks set by the party concerning strict observance of the law in economic relations.

### The Structure of Contractual Ties

Successful implementation of the planning function of the economic agreement depends largely on the structure of contractual ties, that is, on the organizations among which the agreements are concluded. With the delivery of products, direct economic ties are different from economic ties in which supply and sales organizations participate. When delivering large batches of products it is preferable to have direct ties which make it possible to take into account the actual needs of the client for particular kinds of products and to establish good conditions for economic interrelations. Therefore, recently a great deal of attention has been devoted to the development of long-term direct economic ties between the suppliers and the consumers.

With such economic ties, long-term agreements are concluded, as a rule, for a five-year period, which corresponds to making the five-year plan the main form of planning and creates stable interrelations among suppliers and consumers. But, in spite of the progressive nature of long-term agreements, economic organizations acting in the role of suppliers are not willing to conclude them. This is explained by the indefinite prospects of acquiring material and technical resources necessary for manufacturing the products. Although the main form of production planning is the five-year plan, the funds, the contract and other planning documents for distribution are still issued by the year, as a rule.

According to point 11 of the provisions concerning the delivery of products for production and technical purposes, orders for delivery are issued in cases where long-term direct economic ties have been established. Here the interrelations of the parties are regulated with the help of attachment plans, and if the latter are established for five years, the problem of making the five-year plan the main instrument of planning material and technical supply will be resolved to a considerable degree.

Although direct economic ties are preferable in principle, it would be wrong to think that the participation of material and technical supply agencies in contractual relations is generally undesirable. In many cases this participation is expedient, for example, when providing equipment for enterprises that are being constructed or renovated, when providing for comprehensive guaranteed supply, when delivering products in small quantities, when products are sorted and prepared for consumption at wholesale bases, and in a number of other cases.

The conclusion of agreements between supply-sales organizations and administrative agencies of industry are especially important. The participation of administrative agencies in contractual relations makes it possible to determine in the agreements the production program for the list of products, to place



planning on a contractual, khozraschet basis, and to use the economic agreement effectively in planning. Such contractual relations develop in the middle unit of the economic system, where they are concluded between administrations of industrial associations, main union supply and sale agencies, and wholesale trade organizations. Five-year agreements are also concluded by main administrations of the USSR Ministry of Trade, and in Belorussia, between the Ministry of Trade and the republic's industrial ministry.

The content of such agreements is regulated by new legislation concerning deliveries. Point 20 of the provisions concerning the delivery of products points out that the main union supply and sales organizations under the USSR Gosplan conclude long-term agreements for five years with administrations of industrial associations and other khozraschet administrative agencies of industry for providing the national economy with the corresponding products. On the basis of the agreement that is concluded, the administrative agency of industry takes on the responsibility of providing in the associations, enterprises and organizations under its jurisdiction for the manufacture of products, the quantity and list of which are coordinated with the main union supply and sales organizations, and the latter must sell the products that are manufactured in keeping with the agreement. The agreement stipulates the policy and time periods for submitting long-term and annual orders for products, the quantity and assortment, the policy for organizing economic ties for deliveries of products, and also other conditions which the parties consider it necessary to include in the agreement. The mutual property liability of the parties is determined by the legislation and the agreement.

The participation of khozraschet administrative agencies in contractual relations is completely justified, and it should be expanded. This pertains not only to administrations of all-union and republic industrial associations, main supply and sales agencies and wholesale trade organizations, but also to industrial and construction ministries when they are working on a khozraschet basis in keeping with the decree concerning the improvement of the economic mechanism and taking into account the experience of the USSR Ministry of Instrument Making, Automation Equipment and Control Systems and also a number of ministries of union republics whose activity is organized under the conditions established for industrial associations. Such organization of their activity is completely substantiated and is predetermined by the fact that the ministry, like the administration of the industrial association, is the center of the economic system and since the system as a whole operates on a khozraschet basis, the administrative agency--the center of the system--cannot remain outside the khozraschet either.

The development of khozraschet fundamentals in the activity of the ministries and other agencies for production administration inevitably leads to their being included in economic-contractual relations, which makes it possible to better coordinate the activity of the related branches of industry and the national economy. This tendency has been reflected in the new provisions concerning deliveries, which discuss the need to develop khozraschet relations among agencies for the administration of production and material and technical supply.

Economic agreements that are concluded between agencies for administration of production and supply-sales organizations are regulated in many cases by non-commercial economic relations, for example, for the organization of material and technical supply, which was discussed above. The application of these agreements is closely related to the development of the planning function of the economic agreements. Noncommercial agreements are also concluded in the intraeconomic sphere--between production units of associations, construction enterprises and their subdivisions--brigades. But up to this point we have not developed clear-cut theoretical bases for the conclusion of these economic agreements, which impede their legal regulation.

#### The Conclusion of the Economic Agreement

This process amounts to adopting a joint planning decision concerning the determination of the production program of the organizations among whom the agreement is concluded. In July (1979) the decree of the CPSU Central Committee and the USSR Council of Ministers on improving the economic mechanism envisioned an inseparable link between planning and contractual work at enterprises and in associations. When developing the draft of the five-year plan the enterprises and associations must determine the conditions for future economic agreements in conjunction with supply and sales organizations.

Provisions have traditionally arisen and been reinforced by legislation, according to which the draft of the economic agreement is developed by the supplier or the organization that is to perform the work or render the services in keeping with the agreement. But with such a policy the supplier or organization that is performing the work under the agreement has the opportunity to name its conditions for the other party and is not always motivated to produce the products and carry out the work that is actually needed by the consumer. Therefore recently there has been a suggestion to change the existing policy and make the client an active party in the development of the draft of the agreement. This is already being realized to some degree with the conclusion of agreements between enterprises and supply-sales organizations concerning deliveries from the warehouse. In these cases deliveries are made on the basis of an order which is drawn up according to a particular form by the client enterprises or associations which establish in the agreement the necessary list and assortment of products that are to be delivered. The role of this form of supply is now increasing, which is explained to no small degree by the possibility of the client influencing the formation of the conditions of the agreement.

When economic agreements are concluded differences of opinion frequently arise among the parties. Disputes that arise when concluding agreements are resolved by state arbitration agencies which are guided in this by the established plans and the existing economic legislation. Oriented toward satisfying the needs of the consumers, the arbitration board, when resolving these disputes, as a rule, gives preference to the requirements of the client. But they also take into account the real capabilities of the supply enterprises and associations of manufacturing the products.

Considering the differences of opinion that arise when concluding agreements, the arbitration board resolves the dispute not only concerning the law, but also concerning the plan. For the conditions of the agreement are becoming an element of the production plan for the supplier enterprise. Precontractual disputes that are resolved by the arbitration board, for example, concerning the products list and assortment of products that are delivered, are frequently extremely complicated. The development by the ministries in conjunction with the USSR Gosplan of a list of products that are to be manufactured and delivered by each enterprise and association helps to resolve these disputes correctly. Such a list, on the one hand, protects the interest of the supplier enterprises, making it incumbent on them to conclude agreements only for products which correspond to their production profile and, on the other hand, it ensures the interests of the client which can demand the conclusion of an agreement for the delivery of any products included in the list, even if the manufacture of this product is disadvantageous for the supplier. The establishment of lists of products that must be manufactured and delivered considerably facilitates the work of arbitration agencies and makes it possible to realize the planning function of the economic agreement more efficiently.

#### Responsibility For The Fulfillment Of Economic Agreements

The decisions of the 26th Party Congress point out the need to increase the effectiveness of economic sanctions for failure to fulfill planned assignments and contractual commitments. Until recently they were not effective enough because of the fact that according to the existing tradition the responsibility for the failure to fulfill planned assignments and contractual commitments was regarded as two different kinds of responsibility that were not related to one another. With this situation the economic agencies were concerned only about the fulfillment of the plan, which made it possible to form incentive funds and pay bonuses to workers. In 1978 a new policy was introduced for evaluating economic activity, taking into account the fulfillment not only of planned assignments, but also contractual commitments. This helped to increase the effectiveness of the responsibility for the fulfillment of agreements and to strengthen its motivating influence on the economic agencies. Thus in certain branches, for example in the petroleum and gas industry, they have achieved practically complete fulfillment of contractual commitments.

But in industry as a whole the new policy for evaluating economic activity has not produced the desired results since many ministries have established a scale of bonuses whereby bonuses are paid even when contractual commitments are not fulfilled. Moreover their fulfillment has not been taken into account when summing up the results of socialist competition, the winners of which are sometimes enterprises which have not fulfilled their contractual commitments.

In order to eliminate these shortcomings, on 24 August 1981 new instructions were approved concerning the policy for awarding bonuses, taking into account the fulfillment of contractual commitments, whereby when they are underfulfilled by more than 2 percent the bonuses are not paid. Only in exceptional cases is it allowed to pay bonuses when contractual commitments are underfulfilled in an amount of up to 3 percent. At the same time, for certain kinds of products which are important to the national economy, bonuses can be awarded to workers only with 100-percent fulfillment of contractual commitments. It is also important that the fulfillment of contractual commitments be taken into account when awarding class positions in socialist competition.



Since these measures were not introduced until 1982, it is still too early to evaluate their real influence on economic relations, but there is no doubt that they will contribute to increasing the responsibility for the results of economic activity.

The decisions of the 26th Party Congress envision expanding the system for evaluating economic activity taking into account the fulfillment of planned assignments and contractual commitments, and extending it not only to deliveries, but also to cargo shipments and contracting work. It seems that in the future this will become the basic and unified system for the entire national economy. Measures of responsibility should be developed in conjunction with economists and lawyers who work in the area of economic law.

The development of new forms of responsibility does not preclude the utilization of traditional forms as well--the exacting of fines and reimbursements for losses. There are certain shortcomings in this area, the main ones being the mutual amnesty of economic agencies and their inadequate utilization of their rights to exact fines. Since it is not only the enterprises and associations, but the entire society that is interested in this responsibility, a policy has been established whereby the application of fines for the violation of contractual commitments for the delivery of products is not only the right, but also the responsibility of socialist organizations. This policy is still not being observed in many cases, which makes it necessary to develop a legal mechanism which provides for its actual implementation.

It would be incorrect to reduce all causes of mutual amnesty to the desire not to damage the interrelations with partners. The reason here is deeper and consists, in our opinion, in the inadequate economic motivation of management agencies to apply sanctions. The fines that are exacted go into circulating capital and are dissolved in it, without exerting a direct influence on incentive funds. It seems that part of the fines exacted from organizations that allow violations should be deposited directly into the incentive funds of the organization that has been harmed.

The introduction of such a measure would activate the application of fines and would help to solve the problem of mutual amnesty since in this case the interests of the society in strengthening contractual discipline are combined with the interests of the labor collectives. The main stimulating factor for responsibility is its irreversibility, but so far this condition is not being met.

The failure to fulfill contractual commitments by contracting agencies, the shortage and the late delivery of raw and processed material by them, and the delivery of poor-quality and incomplete products frequently entail underfulfillment of the plan by the client enterprises and a subsequent reduction of their incentive funds. And this not only involves the material interests of the workers, but also has a negative effect on the social development of the labor collectives and limits the possibilities of constructing housing and conducting social-cultural measures that are financed from incentive funds.



In addition to increasing the economic motivation of economic enterprises to apply sanctions, we should more extensively practice the establishment of responsibility for the failure to apply them. The new provisions concerning deliveries envision that if a fine is not exacted from a supplier for failure to meet a delivery date or failure to deliver products, the client himself must pay the fine into the union budget.

Reduced responsibility has now been established for certain branches of the economy. We are speaking about transportation, energy supply and several other organizations. When they violate economic commitments they pay only insignificant fines, while organizations of industry and other branches must not only pay fines, but also reimburse losses that arise because of their failure to fulfill commitments. This puts them in an unfair position. The press has long and persistently expressed the opinion that increased responsibility of transportation and energy supply organizations would contribute to improving their activity and strengthening contractual discipline.

The responsibility of the higher planning and economic agencies for losses that arise for the enterprises and associations as a result of their incorrect administrative decisions is still an unsolved problem. The ministry can easily violate contractual relations of the enterprises under its jurisdiction with an order concerning a change in the plan or the establishment of an additional assignment. As a result, the enterprises will have to pay the fine to their contracting parties, while the actual party guilty of the violation is unaffected. This situation does not correspond to the development of khozraschet bases in the organization of production. The development of khozraschet in all units of the economy requires the introduction of the responsibility of economic management agencies in these cases. Here one could also take into account the experience of other socialist countries, especially Bulgaria, where such responsibility has been established.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

COS:1820/111

## VARIOUS FORMS, ADVANTAGES OF DIRECT PRODUCTION CONTRACTS EXAMINED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 48-58

[Article by A. A. Shokhin, candidate of jurisprudence, Gorkiy faculty of the All-Union Law Correspondence Institute: "Direct Agreements of the Production Association"]

[Text] The practice of economic activity confirms the great effectiveness of direct long-term contractual ties of production associations. The main positive effect of these ties consists in that permanent business contacts of the associations make it possible to efficiently account for changes in the demands, to reduce stocks of raw material, process material, metal and batching items, to provide for rhythmic production, to reduce nonproductive expenditures, to accelerate the turnover of circulating capital, and to increase the social activity of the production collectives.

This conclusion is confirmed by many years of work experience of many production associations in industry, including the GAZ automotive association. Thus the changeover of the Gorkiy automotive plant to direct long-term economic contractual relations for deliveries of nonferrous metals improve the process of coordinating the assortment of products, and the time periods of the agreement came as close as possible to the delivery period. There was a sharp reduction in forced replacement of one kind or size of metal with another, which previously led to a considerable overexpenditure of it. As a result, each year the GAZ association saves about 1,500 tons of ferrous metals. The amount of time the metal is stored has been reduced from 30 to 10 days. The economic effect obtained from accelerating the turnover of circulating capital has reached 1 million rubles a year. A similar situation has arisen with respect to deliveries of batching items.

Of course the changeover to direct long-term ties in and of itself does not automatically produce an effect in the form of reducing production stocks; it only lays the basis for obtaining this effect. The legal service of the metal supply administration of the GAZ association does a large amount of work in the process of concluding direct long-range contracts. And here it has succeeded in bringing the time periods of the contract as close as possible to the beginning of deliveries. Moreover, the delivery periods are frequently established not only with a breakdown for the various months (this is now an

unchanging rule), but also for the various 10-day periods. Of course the reaction of the supplier in these cases is negative. These conditions are not always convenient for him. It is necessary to "reconcile" the interests of the supplier and the consumer. One can do this to a considerable degree within the framework of the contract. Otherwise why is a contract needed if it only repeats the attachment plan?

Another essential advantage of long-term contractual ties consists in that these ties contribute to improving the quality and increasing the durability of products in a planned way. Long-term contractual ties of the Gorkiy automotive plant, the Transvolga motor plant and the Yaroslavl plant for industrial rubber items were one of the main factors that made it possible to increase the running time of GAZ-24 motor vehicles before capital repair by 50,000 kilometers, making it 350,000 kilometers, to increase the service life of engines and the durability of rubber parts by 40-50 percent, to reduce the labor-intensiveness of technical servicing of the motor vehicles, and to reduce the average annual expenditure of spare parts on operation before capital repair by 15-20 percent. Largely as a result of these measures, in the country as a whole under the 10th Five-Year Plan there was an economic effect in an amount of more than 20 million rubles. Each contract with a related enterprise stipulates the policy and conditions for work to improve quality and update the products. A contract for creative cooperation is usually concluded with each of the related enterprises, taking this economic contract into account. But its pivotal point again is the contract for direct long-term ties or a variety of it--the contract for cooperative delivery.

Finally, long-term contractual ties have reduced the expenditures of the association and its contracting parties on the transportation of products. For example, the introduction of special reusable metal containers in keeping with the contract created the basis for comprehensively mechanized transportation of batching items. The annual savings from this reaches 300,000 rubles, and the idle time on rail transportation has decreased while the volume of rail shipments has increased. The savings from replacing wooden containers amounted to more than 500,000 rubles a year. Thus long-term contractual ties increase the efficiency of the utilization of material and labor resources not only in the process of manufacturing products, but also during transportation and during the period of operation.

The list of examples of the effectiveness of long-term contractual ties in the activity of production associations could be continued. Still, existing experience in the organization of long-term contracts of production associations and enterprises shows the need to improve them. Of course, this problem can be solved only with a combination of economic, organizational, legal, technical and even educational measures. The basis for the improvement of long-term contractual ties is legislation concerning deliveries that has been enacted on the basis of an analysis of many years of experience in economic contractual relations.

The methodological instructions, "On Organizing the Work for Concluding Economic Contracts for the Delivery of Products for Production and Technical Purposes Under the 11th Five-Year Plan," which was approved by a joint decree of the USSR Gosnab and State Arbitration Board, and the new provisions concerning

deliveries of products clearly distinguish three kinds of contractual relations: direct long-term, long-term and extended-period contracts. They are concluded for a five-year period, as a rule. This is also clearly confirmed by the experience in organizing contractual relations under the 11th Five-Year Plan. Thus about 95 percent of the contracts concluded by the GAZ association in 1980 and 1981 were for five years. But inherent in each of the aforementioned kinds of contracts are peculiarities that exert an essential influence on the organization of economic ties.

Direct long-term contracts are concluded on the basis of the plan for the attachment of the manufacturer to the consumer. This is also defined by a number of features inherent in it: the lack of intermediate units, more widespread rights of the party, and so forth.

Long-term contractual ties are also characterized by the existence of an attachment plan, but they are arranged with the participation of an intermediary.

Extended-period contractual ties, as distinct from direct and long-term contracts, although they are concluded for several years, as a rule, five, they cannot be refined on the basis of planned assignments (orders) that are established for each year. There are no attachment plans. In this situation it is quite permissible to have a situation wherein a change in the planned assignment for the delivery of a strictly funded product involves a dissolution of the contract. It is no wonder that when concluding extended-period contracts for the 11th Five-Year Plan the majority of enterprises and production associations included in them conditions concerning annual refinement of the quantity, overall value, products list and even assortment of the products that were to be delivered on the basis of a planning document that was submitted to the parties annually under the established policy. The influence of extended period contracts on production planning is indirect, which essentially distinguishes them from direct long-term contracts.

Extended period contracts are developed under the influence of the experience of direct long-term ties.

It seems that the problem of increasing the effectiveness of direct extended term contractual ties is inseparably related to improvement of the planning mechanism, and especially interrelations between enterprises and production associations, and also between them and supply and sales agencies.

Let us begin with the first circle, if we may call it that--with the interrelations between the enterprises and production associations. The attachment plan, on which the direct extended term contract is based, determines the principle issues themselves, from the standpoint of centralized planning. This involves establishing the manufacturer and consumer, the list of the main products and their volumes. The rest of the questions, as a rule, are recorded in the contract which becomes the basis of the production plan for the manufacturer.

In this connection it is obvious that a direct extended term contract should coordinate the production programs of the consumer and the manufacturer. The latter must produce that which is required by the consumer and deliver the



products within time periods that are convenient and in a way that prevents nonproductive expenditures. It would seem that this plan is simple to implement. The direct extended term contract determines a detailed list of products, delivery times with a breakdown for the various periods, conditions for refining interrelations of the parties for the next year, and so forth. Yet experience tells us something else: the increased effectiveness of direct extended period contracts has been impeded for years by the existing and ingrained priority of the manufacturer (supplier) over the consumer. This is quite clear from the example of refining the interrelations of the parties for the next year.

The contract for direct extended period ties is concluded, as a rule, for the period during which the long-range plan for economic and social development is in effect, because of which the commitments of the parties must be refined each year. These refinements involve primarily the quantity, assortment and delivery times of the products. The experience in utilizing the "model contract" for the delivery of products under direct extended period economic ties showed that the method of refining the interrelations of the parties is not without shortcomings.

First of all, the "Model Contract" stipulates that the quantity and developed assortment of products subject to delivery within the annual volume are refined by the parties in the order and specifications, that is, the intermediate units between the production plan of the supplier and the consumer is not only the attachment plan with the contract, but also the order and specifications based on it. And if the contract is objectively necessary in all cases, this cannot be said about one-time application of both the order and specifications that are submitted to the supplier by the consumer. This conclusion is confirmed by many years of organizing contractual relations for the delivery of products of enterprises and associations of the automotive industry. Not one of the contracts of the GAZ association under direct extended period ties for the delivery of metal and batching items and parts envisions refining the interrelations of the parties using the order. This task is completely fulfilled by the specifications, which concretize the interrelations of the parties in the next year.

The provisions concerning the delivery of products point out that the developed products list (assortment) for products is determined in the specifications that are coordinated by the parties. Therefore one should refine the content of the "Model Contract" and point out that the quantity, assortment and other conditions for the delivery of products in the next year can be determined either in the order or in the specifications. Let this issue be resolved by the supplier and the consumer, taking into account their peculiarities, but without extra paperwork.

It is very important to distribute the obligations of the parties according to the specifications. This responsibility should not be placed on the consumer alone. The supplier knows best the production capabilities for manufacturing the products. It is no wonder therefore that in many contracts for direct extended period ties the obligation of submitting the specifications is placed on the supplier (manufacturer), and he brings up disputes to be resolved by

the arbitration board or another competent agency if the parties have not come to an agreement themselves. Sometimes the consumer submits the specifications. This is usually brought about by the nature of the interrelations between the organizations and the delivery of the given kind of product that is assigned to them under particular conditions.

In practice, incidentally, one encounters a situation wherein there are differences of opinion between the supplier and consumer with respect to the obligation to submit the specifications, when nothing is said about the delivery commitments. In these cases the assignment of the responsibility for submitting the specifications to the consumer alone worsens his situation. When bringing up a dispute before an arbitration board the consumer must prove the legality of his requirements not only by referring to his own production needs, but also the capabilities of the supplier. And he usually does not know enough about the latter. In the final analysis the requirement for submitting specifications by the consumer is additionally reinforced by the priority of the supplier in contractual relations. And experience shows us that another solution is more correct: consistently defending the priority of the consumer in the organization of economic contractual ties for deliveries. The new provisions concerning the delivery of products are oriented toward this. They say that "the policy and time periods for coordinating and changing specifications are stipulated in the contract" (point 25).

It would seem that there is no single formula for distributing responsibilities for submitting specifications. Frequently under one and the same contract the specifications for the first year are submitted along with the draft of the extended-period contract by the supplier, and in subsequent years--by the consumer.

Which variant is better? The specifications as a document that reflect the need are submitted by the consumer. But at his discretion this obligation can also be fulfilled by the manufacturer. In the event of disagreements between them, the supplier must make application for a resolution of the dispute. He is also obligated to prove the unacceptability of the requirements of the consumer. It would be expedient to make these refinements in the text of the "Model Contract."

Of no less practical significance is the determination of the time period during which it is necessary to submit specifications for coordination. Usually they are submitted within 30-60 days before the beginning of the semester or quarter. Disputes that arise then and arbitration decisions indicate, perhaps, one thing: the decree takes as a basis the production capacities of the supplier and the needs of the consumer. It is no accident that the "Model Contract" has left this question to the discretion of the parties. Therefore disagreements regarding it are immeasurably more frequent than regarding other conditions of the contracts. Granting the parties the right to determine independently the time periods for submitting specifications had the goal of bringing these time periods as close as possible to delivery times, taking into account that it is necessary to account more fully for the needs and capabilities of the parties. Thus it was suggested that transfer supplies of the consumer be reduced to a minimum and that nonproductive expenditures be eliminated. On the whole this task is being carried out, but not effectively enough.

The suppliers strive to establish the longest possible time periods for submitting specifications (sometimes 60-75 days before the beginning of the quarter or the semester). It is clear that this does not suit the consumer and stands in contradiction to the essence of direct extended term ties. Usually, in the protocol concerning the differences of opinion regarding the contract these time periods are set at 30-45 days.

What circumstances affect the time periods for submitting specifications? Obviously they depend primarily on the submission of orders or plans for shipments to transportation agencies. Thus the regulations for the USSR railroads stipulate that the cargo dispatcher must submit an order for the means of transportation he needs 45 days before the beginning of the quarter. In the event that it is not necessary to submit an order, the shipment plan is given to the transportation organization 30 days before the beginning of each month. Incidentally, these time periods are also somewhat extended and are extremely beneficial for transportation. They should be reduced.

We think that the time periods for submitting specifications should not be greater than the time periods established for submitting the planned justifications for delivery. It would be expedient to submit them no later than 45 days before the beginning of the planned year (semester, quarter). But this is the maximum time period and, in our opinion, it can be reduced. Such a decision is fully coordinated with the policy for planning contractual relations that is established in the provisions concerning the delivery of products. Moreover, it is necessary to take into account that the production program of the supplier, which is formulated on the basis of orders or specifications of the consumers, should take into account their needs as fully as possible and be realistic both in terms of time periods and volumes, and in terms of the list of products.

Quite a few problems arise in connection with changing an already concluded contract for direct long-term ties. In practice this issue is frequently resolved with a great deal of difficulty. Usually the need to change a contract arises because of a change in the attachment plan on which it is based. As a rule, this is done in the form of a notification of a refinement of the attachment plan for the next or for subsequent years. The provisions concerning the delivery of products point out that a change in the attachment plan is allowed in exceptional cases and only after a preliminary consideration of this question by the involved associations and enterprises and a notification of the change no later than 3 months before the beginning of the delivery time (point 9). In these cases it is necessary to clearly indicate the responsibilities of the parties for documenting the change with an additional contract. Notification of refinement of the attachment plan cannot be accepted for application or replace the contract. The form of the agreement should be determined by the parties, and as such is completely suitable for additional specifications. But the contract for direct long-term ties should stipulate beforehand the policy and form of refinement of interrelations between the parties when changes are made in the attachment plans.

A change in the volume of deliveries on the initiative of the manufacturer is allowed only if changes are made in the attachment plan. Other circumstances do not have legal validity. Thus the state arbitration board did not support



the request of one of the enterprises to reduce the order, which was made only on the basis of the fact that, according to a notification of the higher agency, this enterprise will not be provided with sufficient supplies of ferrous alloys which are necessary for manufacturing the products. The aforementioned reason can be the justification only for reducing the amount of responsibility for the failure to deliver, but not for reducing the amount of deliveries itself.

Making changes in direct long-term contracts can be related not only to a change in the attachment plans, but also to new circumstances that pertain, for example, to the means of transportation, the accounting policy and so forth. Usually they are documented with additional agreements appended to the contract.

When considering the problem of planning direct long-term contractual ties, it is necessary to note that the attachment plan established by the higher agency, in terms of its content, is sometimes the same as the schedule order which is used to plan ordinary deliveries of products throughout the years. Frequently the schedule orders are used for execution and replace the contract. For example, for a number of years the attachment plans for the delivery of metal by the Magnitogorsk, Chelyabinsk, Dnepropetrovsk and other metallurgical combines to the GAZ association regulated in detail not only the grades and sizes of rolled metal and other specifications, but also indicated the machine tool on which the products were to be manufactured. It should be noted that this practice arouses serious objections since it restrains the initiative of the parties. The usual argument in favor of the expediency of such planning is the critical shortage of certain kinds of products, as a result of which planning, even with long-term direct ties, includes ever more important issues regarding the interrelations of the parties. Actually it is possible to justify such a detailed regulation of the interrelations of the parties in attachment plans only in relatively rare cases. But even in these cases there is some doubt about giving such detailed specifications.

When speaking about improving direct long-term contractual ties one cannot but mention another important issue. At the present time only in rare cases does the enterprise or production association conclude direct long-term contracts both for material and technical supply and for the sales of their products. Thus the GAZ association has attachment plans for the supply of metal, batching items and parts, but it does not have them for the delivery of machines and spare parts. It is undoubtedly impossible to establish attachment plans for all consumers of the automotive plant's products. But for large and stable deliveries this is not only possible, but also necessary. It is difficult to understand, for example, why attachment plans are not established for the deliveries of automotive chassis to plants that produce specially equipped motor vehicles. This is more a matter of inertia than well-thought-out calculation.

The changeover to the sale of products of the association to direct long-range ties will provide for rhythmic work of the consumers and will contribute to improving the results of their production and economic activity. A decisive step has already been taken in this area in the sphere of cooperative deliveries. Deliveries both within the branch and outside it of cast, forged and stamped items and a number of components and parts that are produced by the association are carried out according to cooperative delivery plans. The latter, in their



essence and content, are little different from attachment plans. It is no wonder that in a number of cases contracts concluded on the basis of these are considered a variety of direct long-term contractual ties.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111

## READERS RESPOND TO ARTICLE ON ECONOMIC MANAGEMENT SERVICES

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 59-78

[Article: "The Economic Service of the Enterprise and the Economic Mechanism" for cited article see JPRS 83340, 26 April 1983, No 1050 of this series, pp 43-50]

[Text] In the first issue of EKO for 1983 there was an article by the chief of the planning and economics division of the Krasnyy Oktyabr' metallurgical plant, I. I. Usacheva, concerning problems of the organization and content of the work of planned economic services. With the selection of material published below the editorial staff is beginning a discussion of this article.

### Utilizing the Recommendations of Science

[Article by Ye. A. Skoblikov, candidate of economic sciences (Penza)]

[Text] The article by I. I. Usacheva was devoted to an important problem. And as the requirements on the economic mechanism increase this problem is becoming more and more crucial. Indeed, as a result of the repeated reorganizations of the head economist's service there has been a violation of the coordination of administration of the enterprise's economy, there has been clear irregularity and lack of definition of its structure, and the functions of the economic subdivisions have been disordered. There is no doubt that the changes made with these reorganizations were the result of subjective decisions.

The head economist has been especially unfortunate. Even being a deputy director, he certainly does not replace him in the administration of the enterprise's economy (he is mainly given the right to sign payment documents for the bank). He cannot make changes in the khozraschet of the enterprise or sign calculations of the prices of products that are produced, and he does not determine and frequently does not approve the staff distribution, time norms, value rates and so forth. As a rule, he is responsible for the condition of statistical accountability, but even the forms that pertain entirely to the sphere of his activity are signed by his subordinates, not to mention purely bookkeeping forms. He has no influence on the condition of bookkeeping. For example, for a year we have been unable to introduce khozraschet in the association simply because the bookkeeping office refuses to calculate the production cost in the cross-section of the shops. The lack of definition of functions and the flexibility of the

situation of the head economist leads to a situation where at each enterprise the content of the functions he actually performs are individual and unique. In our city, for example, one of the head economists handles mainly finances, another lives half the month in Moscow, "working out" the plans and funds the enterprise needs, a third has been put in charge of analysis of economic activity, a fourth . . . and so forth.

But, while agreeing with the correctness and timeliness of the statement of the problem and the evaluation of the situation given by I. I. Usacheva, one must note that her suggestions do not go beyond the functional organization of administrative subdivisions. And this, in my opinion, is not the most effective solution. Efficient work even of all the services of the head economist certainly does not guarantee improvement of the operation of the enterprise, since the goal is the performance of functions and not the final results of production. The achievement of final results requires first of all a unity of production administration as a whole, in which the unity of the administration of the enterprise's economy occupies a subordinate position. Otherwise improvement of the economic work acquires a self-fulfilling significance and is severed from the essential needs of production.

In our opinion, the most complete unity of production administration is achieved in linear and linear-staff systems of administration. With the linear-staff system each manager is assigned a staff which corresponds to his level of administration and provides for the preparation of decisions and their implementation. Here the pivotal point of the staff work is the planning and economic calculations: in order to give a collective an optimal assignment it is not enough to give the list of products and the volume of production; it is necessary to carry out a number of alternative economic calculations, comparing the technical and organizational variants of the decision with the resources, expenditures and results in value terms. The staff should also organize and fulfill assignments, determining the workers and allotting them resources, control the course of production, regulate it with the help of dispatchers, keep accounts of expenditures, and account for the intermediate and final results of production. Thus, fully in keeping with the theory of administration, the staff contributes to linear management in the fulfillment of the five functions of administration: planning, organization, regulation, control and accounting.

The functions listed above are being fulfilled even now. But they are dispersed among various economic subdivisions and broken up within them, and therefore it is very difficult to reduce them to a unified process. Moreover, the functions of administration in economic subdivisions are fulfilled in conjunction with several others (developing prices, filling out orders, drawing up estimates, setting norms and so forth), which reduces their significance. This has taken place because economic subdivisions are organized according to the "khutor" principle, each performing his own set of jobs that are related, for example, to labor organization, finances and so forth. As a result, the center of gravity of the activity of the planning division is shifted in the direction of economic preparation of production--improvement of khozraschet, development of prices, analysis and so forth. Therefore when changing over to the linear-staff system of administration the economic services must undergo serious restructuring.

In what does this consist? Above all it is necessary to single out all executives who perform the five administrative functions listed above and combine them into a staff (we shall call it the organizational division). This staff should be headed by the deputy director for production since the main task is administration of production. Economists, laboratory workers and workers in economic analysis, scientific organization of labor and administration who are not included in the organizational division should be part of the subdivisions that provide economic and organizational preparation for production. Thus they prepare the entire normative base and analytical data on which all of the activity of the organizational division and its manager depend. A head economist should be in charge of the service for economic and organizational preparation of production. With such a distribution of functions the head economist approves all of the normative and economic documentation, and the manager of the enterprise uses his authority to put it into effect. As for the financial division, it should be completely under the jurisdiction of the commercial director: the sphere of circulation also requires unity of administration.

Control and accounting for the results of production in value form are provided by the bookkeeping office, and it would seem that it would be expedient to include all of it in the organizational division. But production administration requires not accounting and statistical activity in and of itself, but results, in order to have the opportunity to intervene in the course of production or plan it correctly. Therefore the bookkeeping office can quite possibly remain an independent subdivision. The frequency and forms of presenting operational information concerning the value results of production are established by the organizational division.

The staff under the manager should consist of a small number of specialists who provide for preparation and control over the implementation of decisions and the organization and regulation of the course of production. In our opinion, the following staff composition could be standard.

a planning group which develops the plan for production in all of its dimensions--from providing material resources to determining indicators for labor, both in physical-substantial and in value form;

a production organization group which determines the assignments for the various subdivisions, brigades and individual workers;

a dispatcher group which exercises control and regulation of the course of production;

a group for accounting and accountability for production and operational analysis.

The existence of the positions of deputy director for production and head economist on the staff, like the sizes of the organizational divisions and the composition of economic subdivisions, will depend, in our opinion, only on the number of workers, the complexity of production and the degree of automation of the processing of economic information. At small enterprises the director himself can be in charge of the staff and manage the service for economic



preparation of production if its tasks are not carried out centrally. At larger enterprises the positions of deputy director for production and head economist can be combined and there can be three separate economic subdivisions: the organizational division, the bookkeeping and financial division and the division for economic and organizational preparation of production. In medium-sized and large production associations it is desirable to have complete centralization of the subdivisions for economic and organizational preparation for production so as to centrally provide the staffs of all levels of administration with normative economic information. If the association includes a scientific and technical center or a scientific research institute, their structure should include a block of economic and organizational subdivisions in the charge of the head economist of the center, who has the rights of a deputy director. This system, in our opinion, is acceptable for all branches of the national economy without exception.

The number of personnel in the organizational division of any level of administration should not exceed 15, for otherwise the control of it itself becomes a problem. Only at small enterprises can the linear-staff system of administration function effectively without mechanization and automation of information processing. And if the manager has the opportunity to use electronic computers to obtain decisions which are developed by the staff "by hand," even at the shop level the staff is not needed at all. This should be kept in mind when improving the structure of the administrative staff and organizing economic services. For example, it is recommended that one extensively utilize the experience of the VAZ in centralizing economic subdivisions, but we somehow forget about the centralization of the processing of information on which it is based.

Having read all this, the reader has a right to ask: But why do you as a head economist of an association not introduce your suggestions? And here we come to what is perhaps the main aspect of the discussion concerning improvement of the work of economic services. Of course the linear-staff structure which is suggested is not envisioned by standard schemata for the administrative staff or normatives for the number of engineering and technical personnel, and therefore it would be necessary to expend no small amount of effort in order to convince the ministry to begin to reorganize the administration. And we would undoubtedly do this . . . if we were economically motivated. I shall be frank. Even the changeover to the new structure itself means a considerable reduction of administrative staff. Moreover, the staff of the manager, when the aforementioned functions are fulfilled properly, is directed toward a constant search for better decisions regarding organization of production, reserves for economizing on material and energy resources, and reserves for reducing the number of workers and increasing labor productivity. But we have not met a manager who will set this goal for himself. And here is why. If the enterprise suddenly shows all of its reserves, its collective ends up in a most difficult situation--the surpluses are removed and the plan for the next period includes the rates of growth of production efficiency that have already been achieved as well as a reduction in the number of workers. But they will not let themselves be "destroyed" either--as a result of other enterprises that have achieved better indicators.

Linear staff administration is a method of intensive management for it is oriented toward a constant search for production reserves. And the shortcomings of the present economic mechanism cause the enterprises to remain if not below the "golden mean," then close to it, hoping for assistance from above and adjustment of the plans and limits. Such a random unofficial line of practical management has given rise to a tendency toward retardation of production rates and reduction of its efficiency.

Hence it follows that improvement of the work of the economic services and a larger role for the head economist depend primarily on improvement of the economic mechanism. To do this it is necessary first of all to have practical implementation of the capacious Leninist formula whereby the enterprises on autonomous financing themselves are responsible, and entirely so, for operating without losses.\* Consequently the collective of the enterprise must, on the one hand, fully dispose of its income and, on the other, bear complete material responsibility for losses that are sustained. Corresponding to this are shared distribution of net output (gross income) with the formation of the wage fund from the remaining money; refraining from funding material resources with reimbursement to the enterprise for damage caused by shortage of deliveries or deliveries of products of the improper quality in the full amount of the loss that is sustained; rejection of assignments for reducing administrative personnel and administrative methods of regulating and controlling the number of employees and the wage fund.

But first of all, it seems to us, it is necessary to reject the expenditure principle of price setting. This is precisely what is to blame for the constantly expanding shortage of packaging, which, in turn, creates a favorable environment for the development of market relations that are not controlled by the state. In production the expenditure principle frequently stimulates an artificial increase in expenditures, increased material-intensiveness, complication of designs of machines and mechanisms, and the replacement of inexpensive materials and batching items with more expensive ones for the sake of the price which satisfies the producer, but not the consumer.

And so improvement of the work of the economic services cannot be an end in itself, although it has a certain significance. But even considering the problem in this aspect, in our opinion, it is necessary to rely more on the theory of administration. The problem raised in the article by I. I. Usacheva would not arise if the recommendations of science had not been simply left to scientific literature.

\*Lenin, V. I. "Poln. sobr. soch.," [Collected Works] Vol 54, p 150.

#### Being Navigators

[Article by P. F. Yefremov, Honored Economist of the RSFSR (Barnaul)]

[Text] I. I. Usacheva began a very necessary and useful discussion in her article. The role and significance of the economic services under the conditions of the intensification of production are increasing immeasurably. Specialists of these services are called the "navigators of the economy." They should not only be called this, but they should also be this!

The multifaceted activity of the economic subdivisions of an enterprise is coordinated by the head economist (deputy director for economics). I have worked in this position for 16 years--beginning at the Altay motor vehicle plant, then at the Barnaul (boiler plant) and the Sibenergomash association that was created on the basis of this. In my article I should like to talk about the head economist. Who is he? What are his rights and responsibilities, how weighty is his contribution to improving the economic mechanism?

First of all, during the period of its creation (1960's), the service of the head economist was formed according to a system described in the "Encyclopedic Dictionary of Economics" (Vol 3, p 835): "At an industrial enterprise he (head economist--author) is in charge of the planning and economics division, the division of labor and wages, the financial division, the economics laboratory, and the normative-research division." In the RSFSR the provisions concerning the head economist were especially established and published in EKONOMICHESKAYA GAZETA of 2 March 1963. The majority of enterprises of the republic are guided by this document. Subsequently every ministry began to operate according to its own discretion, ignoring existing experience, and as a result there was irregularity and disorder in the structure of the economic services.

The Ministry of Power Machine Building set for the Sibenergomash production association a system whereby the deputy general director for economics was in charge of the division of labor and wages and the laboratory of economics and organization of production. The planning and economics division was directly under the jurisdiction of the general director, and the financial division--under the deputy general director for commercial affairs. The head (central) bookkeeping office was under the jurisdiction of the general director alone.

Then the bureau of scientific information was singled out from the division of organization of labor and wages into an independent structural division, and on the basis of this a division of scientific organization of labor and administration of production was organized. The number of workers in the division doubled. It left the sphere of administration of the head economist and was directly under the jurisdiction of the director.

The division for labor and wages had a normative research station for labor. On the basis of this, in the division of the head technologist a new structural division was formed for developments of technically substantiated output norms and their introduction into production. It was under the jurisdiction of the enterprise's head engineer. The change was motivated by the need to centralize norm setting for labor (technical and economic). An important subdivision was removed from the jurisdiction of the head economist, although he remained responsible for norm setting as a whole.

In 1965 at the Barnaul boiler plant, on the basis of the economics laboratory, an information computer center (IVTs) was organized under the leadership of the head economist of the enterprise. Time passed and they developed and introduced many economic innovations, for example the block-schema "Calculation of the Individual Production Assignment for Piece-Rate Workers" and the system for calculating the planned level of their labor productivity. The introduction of these developments produced a great economic effect.

The head economist cherished a secret dream--to transfer the calculation of the technical and industrial financial plan, the five-year plan, the report on labor-intensiveness, and economic analysis of management activity over to electronic computers. But in 1973 a division for automated control of production administration was organized on the basis of electronic computers, and it was under the jurisdiction of the head engineer. In the development of the ASU [Automated Control System] problems of an economic nature were crowded out by technical problems.

The division for labor and wages and the economic laboratory remained under the jurisdiction of the head economist (deputy general director for economic affairs) of the Sibenergomash production association. But it seems that this last unit is also being removed from his influence. The fact is that the Ministry of Power Machine Building has issued an order concerning the organization of divisions for financial and cost analysis (FSA) on the basis of the economic laboratories. Taking into account the fact that approximately 80 percent of the content of the work of FSA divisions in one way or another pertains to design and technological services, there has been a tendency toward the degeneration of the economic laboratory into a unit of the technical subdivision.

The head economist needs an independent economics laboratory very much. This is his staff and his scientific and methodological center. Through the economic laboratories he usually maintains contact with scientific research institutes of the country, receives methodological guidance of the economic education of the collective, carries out comprehensive analysis of economic and organizational resources, and provides leadership of the shop public bureaus for economic analysis. Economic seminars and conferences which are conducted are also the responsibility of the laboratory, and the main thing is that they are responsible for problems of intraproduction khozraschet. Today perhaps one of the most crucial problems for production is the khozraschet brigade since the brigade forms of labor organization should become the main ones under the 11th Five-Year Plan. Who if not laboratory specialists will render methodological and practical assistance to shop economists in introducing brigade khozraschet?!

I think that a more correct approach to the organization of the economic service is demonstrated by the VAZ. Its experience should be utilized when developing standard provisions concerning the economic service.

The main thing in the work of the deputy director for economics is to have a real influence on the economy of the enterprise, and not to be distracted by trivia or to become just an administrator and lose his main direction in the future development of the enterprise while taken up with the hubbub of trivial concerns, but at the same time he should not have his head in the clouds either. His influence should be felt both in the stage of manufacture of the products and in the stage of their planning. All measures earmarked by the technical services should be accepted for implementation only after careful economic establishment and approval by the head economist.

Unfortunately, there is still an incorrect idea to the effect that the position of the head economist is not necessary. But the practice of my own work and the activity of my colleagues at the Barnaul Transmash plant, the mechanics and fitting plant, and the haberdashery combine confirm the important role of the manager of the economic service.



The head economists of these enterprises have found their place in production. They are expected to give answers to the most vital questions of economic practice. They have become real commanders of economic services and help to find economically advantageous solutions, and they are concerned about providing in-depth and precise economic analysis of production activity.

The experience of the Barnaul machine tool building plant is interesting. The deputy director of this plant for economic affairs, V. G. Gorshkov, is at the same time the head designer for ASU. This is new, but it is precisely what is needed today. The ASU division in the hands of the head economist means solving many problems of increasing the influence of the enterprise's economic mechanism.

The head engineer deals with technical progress and technical re-equipment of the enterprise, and the head economist provides for high efficiency of production with the help of economic levers--autonomous financing, a scientific substantiated system of normatives and wholesale prices, a system of material incentives, scientific organization of labor and the search for internal production reserves.

On What Does the Authority of the Economic Service Depend?

[Article by Yu. Ya. Muravitskiy, head economist of the Sevkabel' Production Association (Leningrad)]

[Text] Now, unfortunately, the economic service is playing a less significant role than production services. And it is not a matter of the capabilities of its representatives, which are manifested through the quality of materials that are produced for intraplant use and documents that go from the plant to the higher organizations. It is a matter of the quality of the documents and plans that come to the enterprise and reflect the existing planning practice. It is precisely production that must carry out concrete tasks for the fulfillment of the plan when they receive directive plans which are not balanced with the capabilities of the plants or when there is a shortage of material resources. And this determines its priority over the remaining services.

The fact is that the functions of planning at enterprises are broken down among the services (economics, production, technology, commercial and so forth), which must perform them in keeping with the areas of their activity, having planning subdivisions to do this. The plans are formulated at various times.

This does not enable the economic planning division--the main planning agency of the enterprise--to promptly gain a complete idea of the expected economic condition in the future planning period. For example, the planning division forms the volume indicators for the next year beginning with March-April, and the production division plans the product lists beginning June-July. The materials are ordered even earlier. And the plan for new technical equipment is finally approved for the technical division for the next year only in the fourth quarter . . .

The disparity arises because of the various time periods when the higher organizations are ready to issue control figures to the enterprises for the next planning period.

It would probably be expedient for all subdivisions engaging in planning (bureaus, groups and so forth) to be under the jurisdiction of one individual. There are examples of this (see the article by L. V. Neverovskiy, "The Comprehensive Plan for Economic Work" in EKO, 1982, No 7).

At the present time the enterprises are changing over to a new and better economic mechanism. Because of this the service of the head economist has to perform work that is immense in volume and significance. But the workers of these services are still not included among administrative personnel, whose staff is limited. Their numbers decrease with each assignment that comes to the enterprise for reducing administrative personnel.

They can object: But what about the automated control system and the young specialists who are armed with modern methods? Unfortunately, so far the coefficient of their utilization and, consequently, their effectiveness are extremely small. The manager who is introducing an automatic control system explains only: "Quickly" and "It will be possible to reduce the number of people." The fact that electronic computers require a colossal amount of work for forming machine normative and reference information and that it is necessary to change the consciousness of people who have worked irreproachably in one position for many years are only mentioned in passing. And then how can one achieve efficiency of the operation of electronic computers if the memory is given unbalanced plans and normatives for labor and material which are far from scientific, but are in effect at many enterprises?

Graduates of economic VUZ's when they come to a plant frequently cannot find support for their suggestions, or rather they do not see ways of implementing them. Why? Because the managers of the divisions or services frequently have not mastered economic and mathematical methods of calculation and prediction. They simply do not have time for studying. They are loaded, for example, with compiling for various levels (the all-union production association, ministry and city organizations) reference lists, reports and other informational and explanatory papers, which require a large amount of time and are not envisioned by any normatives.

The questions raised in the article by I. I. Usacheva are correct, but pertain only to the position of the economist at the enterprise. But the main question, in our opinion--increasing the significance of the economic service in administration--can be resolved only under the condition of strict observance at all levels of planning and administration of those provisions which are included in the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979.

#### We Have Specific Suggestions

[Article by Z. M. Novikov, chief of the economic planning division of the Voronezh Production Association for Producing Forge and Press Equipment imeni M. I. Kalinin]

[Text] In recent years the duties of the plant economists have expanded and become more complicated. Their position at the enterprise no longer corresponds to modern requirements. The example of our plant can convince one of how great the disparity is between the duties and capabilities of plant economic planning divisions.

Since the time the enterprise changed over to the system of planning and economic incentives that was envisioned in the well-known decisions of the September (1965) Plenum of the CPSU Central Committee, the volume of production output has increased 3.4-fold. The value of fixed industrial production capital increased 3.2-fold. The list of products produced was expanded, and new subdivisions were created for their production: shops of industrial robots and automated lines, sections of machine tools with program control (with the rights of a shop), and a branch was put into operation with the rights of the plant.

The group of planning indicators has expanded significantly. While previously the volume of commercial output was planned in two prices (in comparable and effective prices), now another five indicators have been added to these. Moreover, an indicator has been established for sales, taking into account delivery of products under contracts.

In keeping with the decree of the CPSU Central Committee and the USSR Council of Ministers of 18 February 1980, "On Significantly Raising the Technical Level and Ability to Compete of Metal Processing, Casting and Wood Processing Equipment and Instruments," another 12 items have been added to the production plan. Now it is planned to produce automated equipment that has program control, and so forth.

The work of price setting has become more complicated. The development of limit prices for all of the products produced has doubled labor expenditures on this operation. The list of special equipment has expanded and, consequently, there is a larger number of items for which prices have to be calculated. The updating and replacement of obsolete equipment and the modernization of machines that are produced are proceeding at accelerated rates. This leads to changes in limit and wholesale prices. Consequently, new calculations are needed.

In 1981 we developed and approved three times as many prices as in 1966. Moreover, the volume of materials for substantiating the price level submitted by the enterprise to the higher organization also doubled since in 1982 calculations were made three times in various prices. The ties between economic planning divisions and related workers both within the enterprise and outside of it also expanded.

And now let us see how the economic service at our plant has changed. In 1966 it consisted of an economic planning division, an economic laboratory and an order desk. Additionally the plant had the position of a head economist, but it was later abolished. The economic laboratory was transformed into a laboratory for scientific organization of labor and was transferred to the division of labor and wages. The order desk was transferred to the planning division. As a result, the number of workers in the service decreased by 23 percent. Perhaps the economic planning division was reinforced? No, there were no essential changes in its structure.

Because of the expansion of the group of indicators and the introduction of new forms of labor organization, the volume of work for shop economists increased immeasurably. And the structure of the economic services of the shop is very irregular, and its duties and functions are not well defined. There are, for

example, enterprises where the economists and norm setters are included in the economic bureaus. At others they work independently. In our plant the norm setters were transferred to the division of labor and wages and they fulfill the role of controllers in the shop. The economist performs all the duties and is responsible for all economic work in the shop.

Many chiefs of economic planning divisions think that the most effective structure of the economic service in the shop is the economic bureau which includes the economist and the norm setter. It performs planning, accounting, reporting and control over the fulfillment of the plan and expenditure of the wage fund, and it also introduces new forms of labor organization, material incentives and so forth. The group of responsibilities of the norm setter should be expanded--he should become the economist for the organization of labor and wages. Unfortunately, not a single VUZ produces such specialists, and in the shop these positions are held, as a rule, by untrained workers.

In our opinion, in order to elevate the role of the enterprise's economist, it is necessary:

to single out from the planning and economics divisions, divisions or groups for prices which are subordinate to the plant director, the deputy director for economics or the head economists;

to introduce into the staff distribution economic laboratories as independent subdivisions, excluding them from economic planning divisions since otherwise the laboratory workers are burdened with current affairs and they cannot perform their immediate functions;

to establish wage categories for economists (as in technical services) which are conferred by a qualification commission;

to remove economists from the staff of administrative personnel so that the number of them will not be reduced along with the number of workers in technical services.

#### Not Only Rights, But Also Responsibility

[Article by V. P. Moskalenko, candidate of economic sciences, deputy general director for economics of the Sumy Machine Building Production Association]

[Text] Now, when the course toward intensification has become the basis of the economic strategy for the development of the national economy, it is not only necessary to grant certain rights to the economic service, but also to indicate clearly its responsibility. In the article by I. I. Usacheva the responsibility of the service and its manager was limited to ensuring that the plans are of high quality, that they are difficult enough, that khozraschet and incentives are organized. In my opinion, the final result of the activity of the economic service involves more than this. This is only part of it. The main thing is constant improvement of the qualitative indicators of the production and economic activity and the ensurance of the fulfillment of the plan in terms of all economic indicators. The deputy director for economic problems, along with the director of the enterprise, should bear responsibility for this part of the activity.



But in this case it is necessary to increase the role of the deputy director for economic problems. Only when the entire complex of organizational and economic problems that are resolved by the enterprise or association are concentrated in his hands will there be the necessary prerequisites for successful functioning of the economic mechanism of administration. Its task is to contribute to the creation of methods of management which will lead to the fulfillment of state plans with a high level of efficiency.

Very important in improving the economic mechanism is the introduction of methods of planning on the basis of scientifically substantiated norms and normatives. Our association has accumulated a certain amount of experience in applying normative methods of planning and accounting for expenditures and has developed methods of calculating normative production capacities and technical and economic justifications for the plan for increasing production efficiency, evaluating the utilization of production capacities, and so forth.\* We have gradually adopted a certain practice of joint work of economic and technical services on improving the economic mechanism for controlling production efficiency. One can illustrate this by creating a system of planning, accounting and control over the introduction of measures of the plan for increasing production efficiency.

Many plants do not conduct an analysis of the initial organizational and technical level of one shop (production) or another. Yet it is possible to establish a justifiable assignment only if one takes the initial technical level into account. The division for technical development (OTR) of the service of the head engineer and the division of economic research engage jointly in this analysis and evaluation.

When reporting on the introduction of measures of the plan for increasing production efficiency the main document that confirms its fulfillment is the document which calculates the actual effect achieved for the various elements of expenditures and presents the content of the measures (new technology and its advantages, the utilization of newly installed equipment, and so forth). The economic effect is included in the report only in the event that changes have been introduced in the norms and normatives with respect to the results of the introduction of the innovation. The calculation of the economic effectiveness is done by the division (or shop) that implements the measure, and it is checked by the chiefs of the division for material normatives, the division for labor and wages, the economic planning division and the head energy engineer, and it is approved by the deputy director for economics.

Our experience indicates that the deputy director for economic problems should be functionally in charge of the subdivisions of technical divisions that engage in problems of developing plans of organizational and technical measures and calculating production capacities, since these problems are directly related to the planning of production and its economic results.

The question of placing the head bookkeeping services under the jurisdiction of the deputy director for economic problems requires special substantiation. In keeping with the provisions concerning the head bookkeeper which are now

---

\*Concerning the work experience of the Sumy Machine Building Association imeni M. F. Frunze for increasing production efficiency, see EKO, 1980, No 12.

in effect in the country, he is directly under the jurisdiction of the director of the enterprise. But planning and accounting are an inseparable whole. And at the enterprise it is necessary to provide for methodological coordination of technical and economic planning for production, labor and production costs with accountability in these divisions. The organization of intraproduction khozraschet and its improvement are frequently impeded precisely by the lack of initial accounting. Therefore it seems to us that in order to provide unity in the methodology of accounting, it would be expedient for the head bookkeeper to deal with these issues under the leadership of the deputy director for economic problems. The interests of the matter require that the country create standard provisions concerning the economic service at enterprises, and its rights and responsibilities.

And, finally, about the individual who can competently work in the position of the head economist (deputy director for economics). Unfortunately, people without specialized education or who have not come up "through the ranks" in economic divisions are frequently appointed to this position. As a result they cannot deal with it in depth, and they certainly cannot sense, as they say, what lies behind each figure. This reduces the authority of the service.

The economy of an enterprise today is a complex area of activity, and therefore, like technology, it should be in the charge of a highly qualified specialist who has rich experience.

Not to Reduce, But to Motivate

[Article by L. A. Fel'dbeyn, deputy chief of the economic planning division of the agricultural machine building plant (Frunze)]

[Text] It is no secret that today the earnings of the most qualified economist or engineer are about 75 percent of those of the average skilled worker. Moreover, this difference is constantly increasing. There have been certain tendencies. Proportion of bonuses in the earnings of engineering and technical personnel and employees is decreasing. On the one hand this seems to be understandable. With the publication of the decree concerning improvement of the economic mechanism, the conditions for awarding bonuses has become stricter and take into account more fully the effectiveness and final result of the labor of the collective. But, on the other hand, the motivation of administrative staff workers is decreasing. For although their wages are comparatively low the intensiveness of the labor of these specialists is constantly increasing, which is conditioned primarily by the objective and steady process of improvement of the economy and, as a result, the constantly growing flow of administrative information.

Thus the enterprises are forced to do planning and accounting both in the new and in the previously existed evaluation indicators. Up to the present time, in addition to the indicator of normative net output, the gross output is being used. And the local party, soviet and other agencies must give reports about the implementation since not all of the industry of the city has changed over to the indicator of normative net output.

In spite of certain instructions which prohibit demanding of the enterprises any references or information except for statistical reports and the fact that the enterprises are not to give any other information, the flow of this information is not decreasing, but is increasing without restraint. The enterprise submits so many kinds of certificates and reports! These include certificates about the actual and expected fulfillment of the production plan, information about the course of the production of consumer goods, reports about economy and thriftiness, about the introduction of various innovations, about the brigade form of labor organization, about the fulfillment of socialist commitments, about product quality and many other things. And all this in various forms is submitted to several offices.

In recent years a large amount of attention has been devoted to disseminating advanced experience and various kinds of initiative. In principle this is useful and necessary. There is no doubt about the effectiveness of such initiatives and experiments as those of the Dinamo, Rostov, Shchekino, Aksay and other workers. Still, each of them requires serious attention and no small expenditures of time. Therefore it is necessary to take a well-thought-out approach to borrowing experience and to select carefully that which is most applicable under given conditions. The right to make a decision about the introduction of one undertaking or another should be granted to the enterprises, and they should not be obligated to do this. Otherwise this process which is not regulated by anybody or anything frequently brings not advantage, but harm. It leads to a dispersion of the forces of the specialists, and shifting from one initiative to another. At our plant, for example, there are 9 initiatives in effect. All the organizational, planning and accounting work to apply them is again on the shoulders of the enterprise's economic service.

There is another tendency which, in our opinion, is questionable. This is the regular reduction of the number of administrative and management personnel (AUP) which continues from year to year. At the enterprises almost all of these personnel are economists, norm setters, bookkeepers and workers in divisions of material and technical supply and sales.

Many writers have correctly noted in the press that if for a long period the instructions for reducing administrative personnel are unwaveringly fulfilled, there will be no AUP personnel at the enterprises anymore. In reality the number of economic and bookkeeping services has frozen at the level of the 1960's. In order to avoid a reduction of their numbers, many specialists of these services are called something else, with all the concomitant job misunderstandings and distortions, which give rise to job irresponsibility.

At the enterprises there are designers, technologists, work distributors and controllers who fulfill the functions of economists, norm setters, commodity experts, bookkeepers, mechanics and energy engineers. But the labor of each worker, as we know, is regulated by the job instructions that correspond to the position he holds. What will happen to the functions that are actually fulfilled in this case? Can one guarantee that they will be fulfilled by some other provisions, instructions or normative documents? Of course not.

In our opinion, it is necessary to give the managers of enterprises the right to determine for themselves the number of AUP.

As for stimulation of the labor of administrative staff workers, it would seem that the enterprises should have an instrument with which to regulate this difficult problem. I have in mind such stimuli as one percent of the wage fund that is placed at the disposal of the manager for establishing personal increments and the Shchekino method. But the first source is too small. As a rule, it is utilized to stimulate the labor primarily of masters who are at the sources of material production, and the application of the Shchekino method is limited within the rigid framework of the normative for the number of AUP.

There is no doubt that to increase the motivation of workers in the sphere of the administration of the enterprise to take an enterprising, creative approach to the matter is one of the important conditions for improving the economic mechanism.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111



## NEW FORMS OF TRANSPORTATION BEING DEVELOPED IN SIBERIA

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 81-93

[Article by G. S. Migirenko, Lenin Prize winner, doctor of technical sciences, head of the academic laboratory for creating means of transportation for Siberia and the Far East, Novosibirsk Electrical Equipment Institute: "The Transportation of the Future Begins in Siberia"]

[Text] "Russian might will increase with Siberia"--when repeating these words which are familiar from school days we forget that Mikhail Vasil'yevich Lomonosov ended this prophecy with the words: "... and the Arctic Ocean." Coal, gas, petroleum, nonferrous metals and many other useful minerals of Siberia already play a large role in the economy of the USSR. With the assimilation of the North and the coast of the Arctic Ocean, where prospecting for underground treasures is also taking place, the significance of the eastern regions increases even more.

But there are many obstacles on the path to these riches. Among the most important are the inadequately efficient means of transportation which, in addition, cause appreciable and frequently unrectifiable harm to the environment. Yet, according to data of the Institute of Theoretical and Applied Mechanics of the Siberian Branch of the USSR Academy of Sciences, winter shipments are very expensive for the country, and up to 14 billion rubles a year are spent on them. The use of specialized transportation will make it possible to reduce this figure by no less than half with the same volume of shipments. According to calculations of the Yakutsk branch of the Siberian Branch of the USSR Academy of Sciences, in Yakutiya, for example, the utilization of light sleds can save no less than 15 million rubles a year.

The 26th CPSU Congress made it incumbent on us, on the basis of the utilization of the achievements of science and technology, to create principally new kinds of transportation. This pertains primarily to such regions as Siberia and the northern part of the country.

The problem that is being developed is not a new one. Even during the Finnish war we had occasion to see an attack by air sleds. They were also used during the Great Patriotic War. But such means of transportation which do not require roads can move only on compacted snow. But Siberia is distinguished by an abundance of loose, powdery snow, in which the sleds "drown."

In 1959 on the way to the mouth of the Yenisey, as part of an expedition headed by academician M. A. Lavrent'yev, we discussed these problems repeatedly. Mihail Alekseyevich at that time expressed an important idea about the possibility of year-around utilization of the powerful rivers of Siberia. An interesting idea was presented at one time by academician A. A. Trofimuk: to create underground pipelines and to locate them along the parallels. A clever snow-mobile was developed by a corresponding member of the USSR Academy of Sciences, B. V. Voytsekhovskiy. I also had occasion to see cross country vehicles that were developed by specialists of the Novosibirsk aviation plant imeni V. P. Chkalov along with engineers from Tyumen. But so far in our country we have not arranged regular production and utilization of specialised means of transportation. The situation is the same abroad. But time does not stand still.

The creation of principally new means of transportation is an extremely difficult matter. The most rigid requirements are placed on them. Such a machine cannot be stopped by the lack of roads; it must move just as easily on water and on dry land, regardless of the time of year and weather conditions. Such transportation should touch the surface of the ground as little as possible. In this respect hydroplaning, hovering and semi-hovering have great possibilities. Moreover, one must take into account that in the tundra, the polar area and the arctic area one can work only with absolutely reliable equipment.

Movement across the northern seas and oceans is a special issue. Now, if the condition of the ice is favorable and the weather is good they can be successfully crossed by atomic ice-breakers, which are followed by means of transportation of the ice-breaker type. With time they can be augmented with means of under-ice navigation and transportation of cargo. American and domestic submarines have demonstrated the technical feasibility of this method by traveling under the ice to the North Pole. Moreover, calculations show that with a water displacement of more than 20,000 tons and a speed of more than 20 knots (37 kilometers per hour) underwater transportation is more economical than surface transportation, especially under arctic conditions.

The new kinds of transportation will not replace the preceding ones. It is more reasonable to find an efficient combination of all available means of shipping. In other words motor vehicles, airplanes, helicopters, probably dirigibles, rail transportation and the river and maritime fleet, along with the latest means, will continue in the distant future to provide cargo and passenger transportation in Siberia and the Far East. The proportions will change, but just as in urban transportation the subways which are effective for mass transportation of passengers have not completely crowded out taxis, trolleys, buses and even streetcars, so under Siberian conditions each kind of transportation will be applied in keeping with the possibilities and conditions, which vary widely in these regions.

When creating new kinds of transportation for Siberia and other territorial zones which are less assimilated but rich in resources, it is important to direct oneself toward complete assimilation in the future and toward the creation of a network of communications on a scale that is no less than that in inhabited regions. These problems require not only scientific-technical and experimental substantiation, but also concrete engineering preparation for

large-scale production and operation of new means of transportation. This is particularly necessary for more economical development, prospecting and assimilation of petroleum and gas deposits because of the expansion of the contribution of the regions of the Far North to the country's fuel and energy balance and the formation of its export supplies.

As we know, main and industrial pipelines are laid in Tyumen Oblast only during the winter. And this is because of the abundance of marshes and lakes that appear when the eternal frost melts during the summer. In order to assimilate a year-around cycle of work it is critically necessary to have special transportation, for none of the existing kinds are capable of replacing it in principle. There is even the task of creating an entire mobile "plant" on an air pillow which is served by special hydrofoil transportation means. This "plant" will be able to dig trenches, and weld, control and lay a pipeline under semi-automated conditions. Good conditions for the lives of the workers will also be created here. The rapid hydrofoil equipment will make it possible to carry out practically continuous and sufficiently reliable surveillance of the pipelines throughout all of their immense distance.

Under these conditions it is necessary to come to a unanimous opinion about the system of management principles on the basis of which new means of transportation will be developed for Siberia, the North and other territories. Presented below is the experience in systematizing these principles.

#### Lack of Roads

In ancient times, in order to move man simply used convenient sections of dry land. Then he began to move on water as well, but he certainly did not select just any rivers or directions of movement. Thus natural roads and routes were formed. Subsequently construction of special roads was started. Thus there arose the famous Roman roads and the path "from the Varangians to the Greeks." Great sea routes were also established and they even began to assimilate the northern sea route. In our day the immense road construction is continuing, air transportation is developing rapidly, and we have begun to create space transportation.

One can assume that the near future will be an epoch of accelerated development of nonroad movement. And it is not only a matter of adapting to the conditions of the northern part of the planet. The need to travel without roads is great in the developing countries of Africa, Asia and America, with their expanses of desert and other impassable areas. Providing transportation in the Antarctic is of special interest. Thus nonroad transportation is a global problem.

Economic considerations and time factors are of immense significance since a usual network of roads cannot be created on unassimilated expanses in a short period of time. Moreover, for a number of regions of the earth nonroad transportation is the only acceptable means of communication.

Nonroad travel has also become the answer to man's eternal desire to increase the speeds of movement, which has led to the appearance of air and hydrofoil travel, the creation of ships that travel on hydrofoils and air cushions, and

screen planes. These requirements have become a stimulus for accelerated development of nonroad transportation. At first the scientists and inventors simply tried to reduce the resistance to movement and increase the speed, and nonroad transportation remained a side effect. Now this is a conscious goal whose realization will make it possible to begin to provide transportation throughout the earth and go beyond it.

By nonroad transportation we mean the lack of a need to construct special roads. But at the same time this does not mean travel at will. There can hardly be an absolute lack of roads even when landing automatic equipment on other planets, for in them it is possible to program the selection of the least dangerous and most economical path for reaching the objects. So also on land it is necessary to utilize all factors for reducing total expenditures on the production of means of transportation and assimilating a territory.

Let us turn to a map of Siberia and the regions adjacent to it. They have extremely typical topographical features--they are literally marked all over with the river systems of the Ob', Yenisey, Lena, Indigirka, Kolyma and other rivers. And the main branches are located along meridians while their tributaries are almost along the parallels.

According to M. A. Lavrent'yev, these rivers form a natural network of roads for summer and winter movement of cargos. Taking into account the ramification of the rivers in any zone, it is possible to single out the most efficient paths for travel. The appropriate support service is also necessary for nonroad shipments. It can be based on the existing service for river and other shipments, but the latter must be augmented with means for eliminating snowdrifts and ice hills both on the rivers and on the approaches to the seas.

#### Universality

This principle is embodied, for example, in the creation of amphibians--water transportation that can move on land. But this is only a particular instance of universality. Universality of means of transportation with respect to the travel environment is a considerably more extensive requirement. It consists in the technical capability of accomplishing economically more advantageous travel in essentially heterogeneous conditions--on dry land, on rivers that are freezing over and have floating ice, on ice, on snow of various kinds, on bodies of water that are grown over, and so forth.

It is undesirable to link these properties with any kinds of manipulations or adaptations. Changing from one environment to another should be an ordinary operation which can be reduced to controlling the equipment alone.

When universal means of transportation are created the rivers will be completely utilized throughout their distance and at all times of the year. It will be possible to cut through necks of land and spits, and to move from river to river and sea to sea. Regular intercontinental commodity and passenger transportation will become a reality. Perhaps there will be regular commercial operations through any areas of the Arctic Ocean.



The levels of universality must be specialized. As with nonroad travel, it should depend on the locality, the time of year, the technical capabilities and the economic expediency. For example, ground transportation should not be required to cross over mountainous and especially hilly areas that are more accessible to other means of transportation. Universality therefore involves specialization of means of transportation and varieties of it. Nonroad equipment can be developed for purely northern and southern zones, for the steppes and deserts, for land-river and sea communications, and so forth. In each such variant the degree of universality should be optimal taking into account the purpose.

#### Year-Around Travel

This principle is related to all the others, but most of all to universality. In essence it requires adaptability of means of transportation to shipments in all weather, regardless of weather and climatic conditions. Like the preceding ones, this principle cannot be absolutized. Apparently it is not necessary to take into account extremal conditions, but the changes from season to season or weather changes within seasons, even sharp ones, should not impede nonroad communications. For instance, moving along the Yenisey, not to mention entering the northern seas, involves essential changes in the temperature and the velocity of the winds.

For Siberia, probably, the most important thing is year-around utilization of rivers, which requires overcoming the dependency on freezing and floating ice, floods, summer shallow places, and so forth. Such problems appear with transportation assimilation of summer tundra, and it is also extremely ecologically vulnerable.

#### Protection of the Living Environment

The requirement for minimization of the negative or, rather, maximization of the possible positive influence of the results of man's production activity on the environment has undoubtedly become necessary for the further existence of civilization. This problem is especially critical when creating and operating nonroad and other kinds of transportation of the future which will be used on immense, newly assimilated territories with an unstable ecological balance.

Slowly but surely, modern transportation is exerting its negative influence on the forests, fields and rivers, and also on the seas and oceans and the air space. But so far large sections of the planet have not been touched and remain in their natural condition. When production activity spreads to them the threat of irreversible ecological disturbances becomes much more critical.

Even the simple construction of roads has negative consequences for nature. The taiga and tundra are especially unstable. If one compares traditional transportation with nonroad transportation, the latter, although to a lesser degree, will still significantly distort the environment. We have in mind the expenditure of fuel, the consumption of oxygen, all kinds of discharges, and so forth.

In the final analysis the transportation of the future will change over to hydrogen and atomic engines with electric drive. One can easily imagine trains and caravans pulled by machines that operate on hydrogen or atomic fuel and contain MGD-transformers that feed electric engines.

#### Lack of Contact

Of all the kinds of means of travel--ground and underground, water and underwater, in air and in space--the minimum resistance to movement is found in cosmic space and the air. From this standpoint the selection of the preferential environment for the movement of means of transportation is predetermined.

Of course, intercontinental passenger travel tends toward space travel. As for cargo transportation, for a fairly long time it will remain attached to one degree or another to the surface of the planet. Hence it follows that in order to increase the economy and speed of travel it is necessary to refrain from contact with the earth's surface and be oriented toward moving from land and water to the air. Herein consists the principle of lack of contact. It also opens up new prospects for maintaining the ecological balance on earth.

Like the others, this principle should not be taken to the absurd. For instance, travel underground can be promising in the northern belts, especially direct transportation of cargo, and urban and suburban transportation. Underwater travel can compete with travel on the surface of the water.

But land and water surface transportation should not be used for mass shipments. We are speaking not only about changing over to air transportation, but also movement near the surface of the land or water. Not on it, but in the immediate vicinity of it. The level of noncontact, that is, the degree of separation from the earth's surface, can vary and can be optimal in each case of mass application of this kind of transportation.

Varying degrees of noncontact are achieved at the present time by three methods: hydrofoiling, hovering and semihovering. These degrees correspond to hydrofoils, air cushion equipment (AVP) and screen flights. With the first an extremely small part of the body directly touches the land or water, and with the other two the connection is an air cushion. They are also distinguished by the means of creating and maintaining the air cushion. With screen flights the flow of air between the broad and short wing and the surface of the land is condensed with the movement of the machine. This turns out to be something like an air cushion which increases the lifting force of the wing. With the AVP the air is artificially forced under the bottom of the machine by a ventilator and is retained under it with a rubber or some other kind of "skirt."

It is clear that in the practical aspect it is a question of minimizing contact with the surface, and not absolutely eliminating it. There is a great area for scientific and engineering thought here.

#### Comprehensiveness

This principle is now the leading one in any large-scale complicated matter. But with respect to the transportation of the future its content must be concretized.

Nonroad transportation will be joined into several systems which contain both classical and new kinds of transportation. Among the new ones we have already named hydrofoil, AVP's and screen flights as preferable. In combination with the present widespread and space kinds of transportation, they will form a complex of means of transportation of the future. There is also the possibility of the appearance and implementation of new ideas, but when they are being developed it is necessary to take into account the entire complex of needs and capabilities.

The principle of comprehensiveness also conditions the selection of the varieties of each of the new kinds of transportation, that is, it presupposes efficient specialization.

The basis has already been laid for the creation of nonroad equipment. We have in mind small universal hydrofoil equipment that was developed by V. V. Sboyev. Another variant of this kind of transportation is sleds produced by the TsAGI imeni N. Ye. Zhukovskiy. Strictly speaking they are hydrofoils because they utilize ordinary sliding along snow and water. The main characteristics of this equipment are these: the small ones have engine capacities of 40 or 80 horsepower, cargo capacities of 300-500 kilograms, and the sleds produced by the TsAGI have 300 and more horsepower. These are conveyances for many passengers which can easily be transformed into cargo vehicles.

AVP's are now produced in several countries, including the USSR, the United States, England, Japan, Canada and France. Most of them are not intended for cargo shipments in northern regions or in general for long-distance travel on land. They are not suitable for Siberia either. Screen flights are not an innovation either. They are being developed and tested here in Siberia, and we have no small achievements.

The history of the development of technical means begins with the creation of just one model. Then there is a ramifying process of development of various variants of the new means. Subsequently most of them cannot withstand competition and die out. There remains a relatively small selection of truly necessary and technically feasible models that are adapted for solving various practical problems.

This is approximately the situation with the AVP. It will be necessary to do a large and fairly lengthy amount of work to create both individual elements and the entire complex of nonroad transportation equipment of the future. Therefore it is even more important to be guided by unified principles for creating them.

Apparently the main element of these systems should be the large-scale AVP's.

Another area for specialization of the AVP and nonroad equipment in general can be to give them certain unique qualities. For example, the ability to jump over ravines or to fly around hills, and to combine hydrofoils with air cushions or AVP's with screen planes.

## Freedom From Accidents

This principle reflects the age-old desire to create a machine with maximum reliability which, however, we have not yet been able to do. Nonroad universal and all-weather transportation should satisfy this principle to an even greater degree. It seems that the corresponding equipment should be provided with automatic diagnosis of the condition of parts that present a danger of an accident in order to promptly give notification and take measures to provide for safety. It is necessary for any dangerous parts of the equipment to undergo careful statistical and dynamic control.

Meeting this rigid requirement should not be regarded as a technical fantasy. Even now there are ships sailing on the seas that have continuous control of the condition of the bearing parts of the body. Means have also been created for 100 percent checking of the endurance and durability of important parts of mechanisms.

## Vibration and Shock Protection

Nonroad means of transportation are a special type of mechanisms in the sense that there are more than enough sources for the appearance of unpermissible vibrations in them. Yet requirements for the safety of people, instruments and parts are constantly becoming more rigid. Therefore for these structures warnings about breakdowns, malfunctions of instruments and discomfort of crews and passengers as a result of vibration is a task of primary importance. The requirement for protection from vibrations is becoming especially strict in connection with the fact that this equipment will operate under extreme conditions, at low and high temperatures, and therefore the materials from which they are produced should be noncold-short and heat resistant.

Thus the creation of nonroad transportation for Siberia and other regions that are being assimilated is an extremely difficult problem which requires a lot of time. A positive role could be played here by a discussion of these problems, a consideration of concrete ideas and suggestions, and also prompt creation of a state special-purpose program.

COPYRIGHT: Izdatel'stvo "Nauka", Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111



## EFFICIENT TECHNOLOGY DEPENDENT ON EFFECTIVE DECISION MAKING

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 95-102

/Article by A. P. Altgauzen and V. A. Berzin, All-Union Scientific Research Institute of Electrothermal Equipment (Moscow) and G. I. Orlov, chief of the special design bureau of the Sibelektroterm Association (Novosibirsk): "Efficient Technology Requires Effective Decisions"/

/Text/ The Basic Directions for the Economic and Social Development of the USSR During 1981-1985 and the Period Up To 1990 devotes special attention to the development of electrothermal processes. During the 11th Five-Year Plan it is intended to provide for a 1.6-fold increase in the output of electric steel, to extensively introduce electric furnaces in smelting, to use plasma, laser and other new technologies in order to considerably improve the properties of metals and materials, to reduce the material-intensiveness of products and so forth. Implementing these tasks will depend to a considerable degree on the production and operation of electrothermal equipment.

Our magazine has already addressed this problem. In EKO, No 6 for 1978 we published a selection of materials entitled, "Sibelektroterm": In Search of the Future." Included among the difficulties on the path to the introduction of highly effective sets of equipment was the lack of smooth arrangement of interactions among all links of the chain--from scientific development to the introduction and utilization by the consumers and the lack of a comprehensive approach. Certain organizational-economic and technical problems of the production and utilization of electrothermal equipment has still not been solved. We are now continuing to discuss this important subject.

The group of areas where electrothermal processes are used is large: smelting steel, ferrous alloys, nonferrous metals, casting iron; producing phosphorous and potassium carbide; obtaining especially high-quality alloys, semiconductors, monocrystals and other materials with special properties; thermal processes in agriculture, daily life and so forth. The equipment for these processes is also varied: from the largest steel smelting and ore furnaces with capacities of

hundreds of megawatts and the height of a 10-story building to instruments for household use (electric stoves, irons, electric boiling pots) whose capacities are only several hundred watts.

The diversity of branches and industries that apply electrical heating is explained by its properties. They include the possibilities of conducting processes without interaction with the products of combustion; the utilization of a special gas medium (hydrogen, nitrogen, argon and so forth) or a vacuum, which provides for high quality of the items and materials. Electric heat enables one to create practically any necessary temperature, which makes it possible to obtain materials and items whose production is impossible by other means (infusible metals, highly fire resistant oxides, corundum, carborundum, carbides, borides, and nitrides of metals, graphite and so forth). Electro-thermal processes can easily be automated, programmed and included in flow and technological lines. And, finally, the pollution of the air basin is incomparably less than with flame burning. This peculiarity of electric heat is becoming more and more important.

But there are quite a few areas in which electric heating has competitors, and the main one is flame heating. Previously it seemed more or less clear: an electric furnace had to be used when questions of economizing on raw material, improving the quality of the material being processed, and improving working conditions came to the fore. Here electric heating is out of the competition. But still since time immemorial there has been the opinion that with all its merits and in spite of the fact that the efficiency factor of electric furnaces is approximately twice that of furnaces with flame heating, electric heat is one of the most energy-intensive technologies. This opinion was based on the fact that the efficiency factor of thermoelectric power stations is low, and they are still the main source of electric energy. The expenditure of primary energy resources per unit of output turns out to be extremely great. Therefore the application of electric heat was considered justifiable mainly when the economy on material expenditures exceeds the loss from overexpenditure of energy resources.

But it would be incorrect to limit oneself to a comparison of the energy expenditures on a technological process for obtaining a particular quantity of a specific product--steel, iron and so forth. It is important to analyze the entire sum of these expenditures for the consumer and the manufacturer. Thus the durability characteristics of electric steel are greater by an average of 30-40 percent than Martin furnace steel, and the same is true of iron castings obtained in induction electric furnaces as compared to those smelted in coke cupola furnaces. There is a considerable improvement in the quality and durability characteristics of metal smelted in vacuum, arc and induction electric furnaces--sometimes 2-3-fold, and also by the method of electric slag remelting. The quality of the parts and components that have undergone thermal or chemico-thermal processing in electric furnaces with vacuum increases 1.5-2-fold and more. And this means that in order to manufacture machines and other equipment it is necessary to have a correspondingly smaller quantity of metal. It is understandable that there has also been a reduction of energy expenditures on the scale of the national economy.

In order to provide a clearer idea of the overall amounts of possible savings on energy, we emphasize that the comparisons presented above pertain, perhaps, to the most large-scale productions: steel smelting, iron casting and thermal processing.

An important advantage of many electric furnaces is the considerable reduction of losses of processed metal in slag, waste, and rejects. In addition to preserving metal, this also means a savings on energy resources. For example, as calculations showed, when smelting aluminum in furnaces heated with fuel oil and in gas and electric furnaces approximately the same amount of energy was expended. But the losses in waste in fuel oil furnaces amount to about 5 percent, in gas furnaces--3-4 percent, and in electric furnaces--less than 1 percent. And a reduction of waste of 3-4 percent produces a savings of initial energy in larger amounts than the actual consumption by the furnace! Taking this into account, the electric furnace turns out to be less energy-intensive.

One must also note the merits of such a progressive area as powder metallurgy, whose main processes involve electric heating. From metal powder one produces parts for general machine building, solid alloys, infusible metals, metal ceramics and many other things. The utilization of this technology instead of mechanical processing reduces the labor-intensiveness to one-third-one-fifth of the ordinary level, reduces losses of metal in wastes by 50 percent, and makes it possible to considerably reduce the stock of machine tools. Pouring metal powder that has particular properties on the surface of parts improves their qualitative characteristics: durability, corrosion resistance and others.

An important property of electric furnaces that are intended for smelting ferrous and nonferrous metals is their capabilities of using scrap metal as raw material. For example, when smelting steel in electric furnaces one uses 100 percent scrap metal, while when smelting in converter furnaces it is possible to add it within the range of 30-50 percent, and the rest must be iron, which can be obtained only with a complete cycle--from extraction of the ore to blast furnace production--with the corresponding energy expenditures (and not insignificant ones!). The situation is analagous with smelting iron, the raw material for which is also blast furnace iron when it is smelted in cupola furnaces, while in induction electric furnaces it is scrap metal and metal wastes.

One should also draw attention to the following circumstance. In order to obtain a ton of blast furnace iron one uses more than 500 kilograms of coke. To smelt cast iron in cupola furnaces one expends more than 250 additional kilograms of coke. In Marten furnaces for each ton of steel one expends an average of about 135 kilograms of conventional fuel (natural gas, fuel oil). In furnaces with traditional methods of heating, during thermal processing or before plastic deformation one also uses natural gas or liquid fuel. All these are valuable energy resources which are also important as chemical raw material. The problem of economizing on them is becoming more critical each year. But in thermal electric stations one uses less valuable kinds of fuel. In the overall output of electric energy there is a constantly increasing proportion of atomic and hydroelectric stations. The decisions of the 26th CPSU Congress envision increasing this proportion to 29 percent by 1985. This should contribute to extensive dissemination of electrothermal processes.

Now let us discuss the possibilities of reducing the expenditure of energy directly in electric furnaces. There are many ways of reducing the proportional expenditure of electric energy per unit of product produced: consolidating equipment, intensifying processes, raising the level of automation and mechanization, and so forth. There are no "discoveries" in this list, but the reserves here are far from exhausted. One can predict quite confidently that in the near future the reduction of the proportional expenditure of electric energy will average no less than 15-20 percent. Thus the use of fiber thermal insulation materials in electric furnaces instead of refractory brick produces a savings of electric energy of 15-20 percent. Increasing the installed capacity of induction channel furnaces for smelting aluminum from 250 to 400 kilowatts also reduces the expenditure of electric energy by 15-20 percent as a result of increasing the intensiveness of the process of smelting.

The situation with respect to salvaging heat from electric furnaces is quite bad. The designs even for such large furnaces as the ferrous alloy and electrical steel smelting furnaces do not include equipment for secondary utilization of heat. In our opinion, there has long been a need for technological organizations to find ways and methods of utilizing this energy for technological needs and heating buildings and structures, and planning organizations should envision the corresponding decisions. Effective secondary utilization of heat is expanding each year in other countries. The decisions of the 26th CPSU Congress direct us toward bringing secondary fuel and energy resources into economic circulation more extensively.

Of course electric heat plays a larger role today than it did previously. But it is becoming widespread mainly because of new processes, whose numbers are great, but the rates and scale of the introduction of each are insignificant. Therefore we lag behind the world level in terms of the proportion of electric steel smelting as compared to the overall volume of steel. The effectiveness of electric steel smelting production is shown by the fact that even in countries where electric energy is expensive and imported fuel is used (for example, in Japan) this area of metallurgy is developing intensively. In the United States the proportion of electric steel in the overall smelting of steel is 4.5 times greater than in the USSR.

One cannot be satisfied with the situation of electric heat in machine building. The stock of electric furnaces that operate at machine building plants has become outdated. There is not enough equipment in industry for vacuum tempering and cementation, ion-plasma and other equipment intended for new technological processes. The initial stage of the assimilation of installations for laser hardening has been prolonged. Let us note that in the ZIL association they have already demonstrated the effectiveness of laser technology.\* The same thing can be said about powder metallurgy. It is also necessary to accelerate the development of iron casting in electric furnaces, whose proportion reaches 30-50 percent in certain countries.

---

\*Fishkis, M. M., "Cooperation in the Area of New Technologies," EKO, 1982, No 10, pp 41-44.



Yet no small amount of experience in the utilization of electrothermal processes has been accumulated in metallurgy, machine building and other branches. Many progressive developments have been carried out by scientific research and technological institutes. The Sibelektroterm production association and other associations and plants of the sub-branch are capable of manufacturing highly effective electric furnaces that correspond to the world level. But the branches which should order, install and operate them are not displaying enough interest in them.

A clear example is the state of affairs with respect of smelting iron in induction furnaces. Their advantages are generally recognized. The Soyuzelektroterm all-union production association has prepared for the production of these furnaces. But there were considerably fewer orders from machine building industries than expected. But those furnaces which were nonetheless manufactured and delivered to the machine builders are either lying in the warehouses or standing idle. According to our calculations, with the furnaces created under the 10th Five-Year Plan it would have been possible to obtain three times more metal than was actually produced. The capacities of electric steel smelting production increased inadmissibly slowly under the 9th and 10th Five-Year Plans, as a result of which the level of smelting of electric steel remained regularly low.

A high evaluation of the role of electric heat in solving the problems that face the national economy was given in the Basic Direction for the Economic and Social Development of the USSR During 1981-1985 and the Period Up To 1990, which were adopted by the 26th CPSU Congress. They envision extensively introducing electric furnaces into smelting and increasing the output of electric steel 1.6-fold. A total of more than 30 of the tasks set by the Congress involving introduction of electric heat directly or indirectly, including tasks for reducing the proportional metal-intensiveness of machines and equipment, increasing the durability of instruments and other items, extensively applying reduced-operation, reduced-waste and waste-free technologies, and so forth.

In order to change the situation radically it is necessary to take a special-purpose approach to problems of introducing electric heat. This, in turn, requires the development of criteria that make it possible to comprehensively evaluate the effectiveness of processes and, on the basis of these criteria, to develop methods for comparing various technological variants with a mandatory output of the final product. This will facilitate an objective evaluation of the significance of electric heat both for the consumers and for the directive agencies.

The work should be coordinated, which is impossible without active intervention by the USSR Gosplan and the USSR State Committee for Science and Technology.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772  
CSO: 1820/111

## ROLE OF ELECTROTHERMAL TECHNOLOGIES UNDERLINED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 102-111

[Article by Ye. Lysaya: "If One Goes Through the Chain"]

[Text] The years that have passed since the first article on the problems of producing and utilizing electrothermal equipment has confirmed the feasibility of the optimistic expectations concerning technical improvement of the equipment and . . . the difficulties of realizing them. Installations have appeared which have marked new technologies in electrothermics: the electron-arc furnace for complete ingots weighing 30 tons (a 100-ton design is already prepared), laser and plasma installations, and 100-ton arc steel smelting electric furnaces with a new design. The geography of the foreign consumers of Soviet electrothermal equipment has expanded. Among these consumers are many economically developed countries. The international authority of Sibelektroterm has been marked by the emblem of the "Gold Mercury" for successes in international competition and scientific and technical progress. But, as before, metallurgy is in no hurry to replace Marten furnaces with electric furnaces, and machine building and other branches are slow in expanding the sphere of the application of electrothermal processes.

What are the reasons for this? Let us trace the introduction of the new 100-ton arc electric smelting furnace, which is known to specialists under the index DSP-100-I6, and we will be able to see the essence of many of the problems that arise.

"A new stage in electric metallurgy," this is how its significance was evaluated by A. I. Morozov, the professor in charge of the division of the Chelyabinsk Metallurgical Scientific Research Institute, which is the head institute in the country for electric steel smelting technology.

The creators of the equipment--the All-Union Scientific Research Institute of Electrothermal Equipment, the special design bureau and the Sibelektroterm association--are making energetic efforts to ensure that their brainchild has a fortunate destiny. Such a large furnace is being completely tested for the first time directly at the assembly stand of the manufacturing shop. Usually the immense bulky electric steel smelting equipment is presented to the clients in the form of various multi-ton metal structures which are delivered on dozens of railroad platforms to the place of operation. And only when it is assembled,

adjusted and made ready for operation is it possible to judge what they have acquired.

For the first time all interested parties and organizations have had an opportunity to become familiar with the new equipment beforehand and to express their opinions, recommendations and desires, which can be taken into account during the process of completing it. A representative forum of specialists and scientists that gathered in Novosibirsk in the Sibelektroterm association shows that the client plants, and the designers and branch science are interested in a comprehensive solution.

Of course many considerations regarding improvement of the design of the equipment arose at the negotiation table. And this is quite natural when speaking about a pioneer technical solution. But when considering the proposals all the interested parties quickly found a common language. The most significant recommendations were included in the protocol of the agreement. It turned out to be much more difficult to agree on organizational and economic problems concerning the assimilation of the new equipment. True, in the end these suggestions as well were formulated in a protocol. But if the technical part of the protocol is already being implemented (immediately after the guests departed certain parts of the furnace were disassembled and they began to make the improvements), the organizational part is still waiting to be implemented.

"The electric furnace of tomorrow should be used for 'bullion' technology: once they have melted the charge in the furnace, that is, prepared the 'bullion', they can 'season' it according to their taste or needs: we do the refining in a special installation outside the furnace where we put the necessary supplements, and there too we regulate the composition and temperature of the metal, and so forth," wrote a well-known specialist in the area of metallurgy, A. F. Myrtsyomov.\*

Because of this organization of the technological process, the cycle for smelting is reduced to one-third-one-fourth the former level, and the effectiveness of the utilization of the furnace and transformer capacities increase significantly.

It is precisely for this kind of technology that the DSP-100-I6 furnace was intended. Everything in it is calculated for high speeds of smelting--a powerful transformer (they just discussed the need for this in 1978 and now it is already created), and special gas burners for accelerating the heating of the charge before the beginning of the melting and for economizing on energy. For the first time the electric steel smelting equipment has a computer control complex (UVK) created by the Kiev Plant for Automated Equipment and Relays. Automated control of the technological conditions will be carried out according to a program which the consumer plant will receive along with the equipment. It is difficult to distinguish the economic advantage of the utilization of the UVK from the great social effect, for the precision of the conditions and the given qualities of the metal will be achieved with a significant improvement in working conditions of the operating personnel who will have to go into the high temperature zone much less.

---

\*EKO, 1978, No 6.

A principally new aspect of the design is the heat shield of the housing of the water cooling panels and the special design of the furnace arch. Lining made of refractory brick could not withstand more than 60-120 smelting cycles. The furnace had to be halted for repair frequently. Now they withstand up to 1,000 smeltings. This prolongs the period of operation between repairs. The design is protected by an author's certificate of invention. All these advanced design decisions provide for a capacity of the equipment of 400,000 tons of steel a year and more, while the 100-ton furnace of the preceding generation, with a planned capacity of 250,000 tons, actually smelts 170,000-180,000 tons. The Demag firm (FRG) is producing a similar 100-ton furnace, intending to receive 500,000 tons of electric steel from it each year. The calculation is made from melting alone--12 smeltings a day and 300 working days (a realistic volume of smeltings is actually not 100, but 110 tons). The smeltings last for an hour and a half plus the time for servicing the furnace.

But if the installation is utilized under traditional conditions, as a universal furnace, that is, to smelt metal itself, refine it and bring it up to the established specifications, its design merits can become shortcomings. If only, for example, because the powerful transformer necessary for obtaining a maximally high temperature as rapidly as possible and accelerating the smelting is a superfluous luxury and an additional expenditure of energy the rest of the time. And the water cooling panels? Super-high temperatures and water! . . . this unusual combination requires precise technological decisions from metallurgy. The metal must be in the furnace exactly as long as it is intended to be during the process of smelting. Then the panels will provide effective heat removal. But if instead of 1-1.5 hours the process lasts for many hours, large losses of heat are inevitable.

As of today only the Donetsk metallurgical plant is realizing the technology for finishing metals without the furnace, but it created the necessary equipment itself, without waiting until the Ministry of Ferrous Metallurgy developed a technological process and ordered 100-ton ladles.

And four of the enterprises which should have been the first to receive the new furnaces--the Orsko-Khalilov, Moldavian and Uzbek metallurgical plants and the Kuznetsk metallurgical combines are not prepared to solve the problem of finishing the processing. It is not known whether they will receive the technology and equipment by the time they complete the assembly of the electric steel smelting equipment.

Of no less importance are organizational aspects in all the remaining stages of the technological chain. Here are the opinions of participants in the discussion that was organized in the Sibelektroterm association.

A mechanic of the electric steel smelting shop of the Chelyabinsk metallurgical plant, V. Ya. Vetrov, speaks:

"Powerful transformers have been delivered. The time required for smelting is being reduced. But in order to provide for quick smelting it is necessary to accelerate the preparatory and completion processes. During the time when the furnace is operating everything should be ready for the next cycle. The problem of crane, ladle and weight equipment, crane operators and auxiliary personnel is critical.



"The technical aspect bothers me less. During the 22 years while I have been working in the shop since graduating from the institute, I have had to assimilate three generations of furnaces. All the imperfections left by the developers and manufacturers were finally eliminated by streamlining and modernizing the equipment, and we are eliminating them ourselves. One cannot concentrate attention on the process of smelting alone; it is necessary to consider the entire technological chain, for otherwise we will have large amounts of idle time between smeltings and will not achieve efficient utilization of the new equipment."

And here is the opinion of the head engineer of the Uzbek metallurgical plant, A. T. Nikokoshev:

"Increasing the capacities of the transformers in itself produces nothing. This does not mean increasing the volume of steel that is smelted. It is necessary to reduce the periods between smeltings. To do this it is necessary not only to have ladles for finishing outside the furnace, but also installations for non-furnace vacuuming, service mechanisms and means for transportation. And working under traditional conditions, because of the capacity of the transformer we will expend extra energy on heating the walls of the furnace housing."

"Many problems should be resolved in the stage of planning of electric steel smelting production," asserts the deputy director of the VNIIE TO for scientific work, B. B. Pel'ts. "But what is happening now leads to the idea that the Ministry of Ferrous Metallurgy regards electric metallurgy as a secondary or even a tertiary problem. The designing of electric steel smelting furnaces is divided among many regional divisions of the Gipromez. For the Donetsk plant the design is being developed by Giprostal', which previously engaged only in ferrous alloy plants; for the Orsko-Khalilov--Lengipromez; for the KMK and Far Eastern--Sibgipromez; for the Moldavian--Ukrgipromez, and for the Uzbek--Gruzgipromez (which has also never dealt with electric steel smelting production). Each has its co-workers for the technical aspects and control systems. Is it really possible to achieve progressive decisions if experience is not accumulated and the latest scientific achievements are not taken into account?"

When designing the startup complex of the KMK (here they installed two 100-ton electric furnaces of the third generation) they reduced the estimate for the bunker equipment and the scrap metal warehouse. As a result, the warehouse has none of the necessary conditions for sorting metal wastes, preparing them and packaging them before putting them into the furnace. But everyone knows that in electric steel smelting equipment that operates exclusively on scrap metal, preparing it for utilization is a most important link in the technological chain. At Dneprospetsstal' and the Chelyabinsk and Uzbek metallurgical plants they are already operating according to several DSP's, while the crane equipment is not developed and there are not enough ladles.

In our country electric steel smelting furnaces are being developed at plants with a complete metallurgical cycle. Here it is possible to obtain steel both from iron in Marten or converter furnaces, and from charges in electric steel smelting furnaces. For these plants indicators of the overall volume of smelted steel, iron and rolled metal are important, and therefore electric metallurgy plays a secondary role there.

An important direction for the development of the production of electric steel is the creation of miniplants that are equipped only with electric furnaces. In many respects this progressive tendency should win out. It has been widely developed abroad. But the Ministry of Ferrous Metallurgy is not constructing new miniplants or electric steel smelting shops; it is only completing what has been started.

M. D. Bershitskiy, the group leader of the Tyazhpromelektroproyekt institute of the USSR Ministry of Installation and Special Construction Work, sees possibilities of improving the planning of electric steel smelting production in the following:

"The process of planning should be creative. Why is there competition for monumental structures while the development of facilities that are no less expensive and no less significant for the state is given to institutes, regardless of their capabilities, simply because in terms of territory they are closer to the planned facility? The competition for the best design of a steel smelting shop would help to select the best designs or the best elements from several, to reveal the creative potential and to develop a standard solution."

Another critical problem in assimilating new technical equipment is time periods. "How much time do you plan to give us to reach the planned capacity?" A. Ya. Kharlamov, the chief of the electric steel smelting shop of the Orsko-Khalilov metallurgical combine, asked the chairman of Lengiprometz, L. A. Abolmov, at the meeting in Novosibirsk. "The usual normative time period: within nine months the annual capacity should reach 250,000 tons," answered the latter.

Note that they envision the same normatives as for the old generation of furnaces--250,000 tons a year! That is the planners are envisioning ahead of time the traditional utilization of furnaces. Where should there be an advantage to the state from this set of equipment which is principally new in design and more expensive?

But to the Orsk metallurgists even this figure seems immense.

The concept "new item," unfortunately, has become extremely loose, and it is applied both when several insignificant parts are replaced and when such a set of equipment is introduced where many principle design decisions are being used for the first time. Can they really have identical time periods for assimilation?

When all of these problems related to the assimilation of complicated technical equipment are considered from various sides one begins to be especially clearly aware of why operations workers are so cautious and unconfident with respect to new equipment in general, and electrothermal equipment in particular. And again and again there arises the problem of the completeness of deliveries and the comprehensiveness of decisions.

"We are learning about the tests of the furnaces without the computer control complex. And this is wrong," says V. Ya. Vetrov.

"We are bothered by the fact that the water cooling panels are created by one group of people, the lining is to be developed by quite a different group (the Eastern Institute of Refractories in Sverdlovsk), and a third group is to purchase the license and machine for the lining. The problem is dispersed. In my opinion, the developer institute and the association that manufactures the furnace should take responsibility for all the other workers," asserts the chairman of Ukgipromez, V. M. Gozdanker.

There are, of course, many problems, including documentation for conducting capital repair and spare parts for it. So far the technical documentation is issued only for adjustment and assimilation, which bothers the clients a great deal. So far nobody has thought about the problem of utilizing secondary fuel, which will rise in the process of cooling the furnaces. Yet this is a very significant resource for economizing on energy by the consumer. The furnace circulates 500 cubic meters of water an hour. With a closed water supply system the temperature of the outgoing water reaches 90-100 degrees centigrade. In world practice there is experience in which a small thermal turbine works from two of these furnaces.

The problem of gas purification also needs to be solved. Let us recall that it was raised in the articles in EKO in 1978. "It is necessary to completely seal the furnace," asserted the division chief of the Sibgipromez planning institute, R. A. Braunshteyn.

In world practice, when designing a shop for these purposes it is accepted to envision a second housing, which also deadens the noise (now the noise level from electric furnaces in operation is at the limit of the sanitary norms). Because of the second housing one can also seal the furnace and concentrate the gathering of discharged gases, which are utilized as a source of secondary chemical raw material.

With respect to cables and devices for eliminating interference in the energy networks the consumer should also deal with only one firm, as is the case abroad.

"Under today's conditions the developer and the suppliers are hardly capable of solving the problem of comprehensiveness. The departmental separation and the principles for the stimulation of new technical equipment do not allow this," thinks M. D. Bershitskiy. "Our institute is responsible for the electricity supply of the furnace itself and the electrical network. With an increase in the capacities of the furnaces it is necessary to have a special large cable. But the developers do not want to handle this since there will be no economic effect (or incentive funds). It is not advantageous for the cable plants to manufacture it. For the furnaces are unit equipment. Not very much cable is used for each of them. What is the solution, in my opinion? If the products are necessary and orders can be submitted for them, it is necessary to take them at a greater cost and to make compensation for their output in the price. A complex of distribution devices is needed for the furnaces. For the same reason it is disadvantageous for the All-Union Institute of Transformer Construction to develop it."

We have considered several problems related to the assimilation of the new generation of arc electric steel smelting furnaces, which are of immense significance for the development of metallurgy. Many of these problems are typical of other electrothermal equipment. This is precisely why induction furnaces are lying in the warehouses or standing idle, electron-arc furnaces are being assimilated slowly, and electrothermal processes are being inadequately used. The set of equipment in itself will mean little if it is not joined in to the entire technological chain and if its high level of engineering decisions is not accompanied by equally progressive decisions in all of the processes and operations related to it.

When designing electric steel smelting shops and developing technological processes one should envision everything, beginning with the scrap metal warehouse and weighing and crane equipment and ending with the ladles for nonfurnace completion of the metal and aggregates for vacuum processing.

The completeness of the deliveries of equipment is of immense importance. It would apparently be expedient for the client branch--the Ministry of Ferrous Metallurgy--and the manufacturing branch--the Ministry of the Electrical Equipment Industry--to determine everything necessary to be included in the set of electric steel smelting equipment.

The role of electrothermal processes in modern technical equipment is so great that, as the authors of the preceding articles correctly assume, it is expedient to develop an entire special-purpose comprehensive scientific and technical program. The decisions of the 25th and 26th CPSU Congresses direct us toward a comprehensive solution to the most important scientific and technical problems and completeness of the deliveries of especially complicated equipment.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111



**LAGS IN INTRODUCING INNOVATIONS, NEW STYLES IN HOUSEHOLD APPLIANCES & OTHER CONSUMER GOODS SCORED**

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 113-123

[Article by A. M. Ilyshev, candidate of economic sciences, docent of the department of economics of industry of the University imeni A. M. Gor'kiy (Kharkov): "Reserves for Intensification in Household Machine Building"]

[Text] The Basic Directions for the Economic and Social Development of the USSR During 1981-1985 and the Period Up To 1990, adopted by the 26th CPSU Congress, pointed out the need for fuller satisfaction of the demands of the population for high-quality industrial goods. A decision was adopted to increase the output of goods for cultural and domestic purposes and household goods no less than 1.4-fold under the 11th Five-Year Plan, to improve their quality significantly, and to constantly improve and update the assortment of these goods. They also envisioned more rapid rates of development of the production of consumer goods.

But, as before, too many various models of household machines are being produced, and they are not very different from one another. There are still long time periods for the development and startup of production of new goods, although even for technically complicated items they should not exceed a year and a half. The technical and aesthetic level of the items is rising slowly. The stores frequently receive outdated goods for which there is no demand. Industry is lagging behind the requirements of fashion.

The authors of the selection published below consider these phenomena and suggest certain solutions in order to accelerate the development and output of new high-quality products.

Nowadays machine building is not only the technical base for the development of the national economy, but also a large supplier of consumer goods. The proportion of machines and equipment sold as consumer goods in our country

in products of group B has increased from 6.2 percent in 1965 to 11.8 percent in 1980. Household machine building now has new tasks for increasing the efficiency and improving the quality of their work, which requires fuller utilization of all production reserves.

#### Specialization--The Main Path

Let us take two examples of machine building enterprises of two oblasts--Kharkov and Kalinin, which are fairly typical: one has created a modern, highly developed machine building complex, while the other does not have such a complex.

Table. Indicators of Specialization of Sub-branches of Household Machine Building on Average for Two Oblasts: Kharkov and Kalinin

Name of sub-branch	Number of manufacturing enterprises	Proportion of specialized enterprises in total number of manufacturing enterprises, %	Volume of production at specialized enterprises in proportion to overall volume of items, %
Household machine building as a whole	125	12.1	38.3
Including:			
Instrument building for cultural and domestic purposes	5	40	53.1
Production of private transportation	7	14.3	63.8
Electric household machine building	20	20	29.6
Production of metal items for cultural-domestic and household use	89	9	30.4

As one can see from the table, the degree of specialization of household machine building in terms of the proportion of items produced by specialized enterprises in the overall volume of their production amounts to only 38.3 percent. Even in the production of individual means of transportation and instrument building for cultural and domestic purposes, where the volume of products manufactured at specialized enterprises exceeds 50 percent, their proportion is still not great. The structure of a branch in which only every 8th enterprise specializes in the output of particular items and only a little more than one-third of the goods are produced at specialized enterprises is clearly inadequate.

This conclusion is also confirmed by union-wide data. Thus among the 288 enterprises of the USSR engaged in manufacturing 70 different kinds of electric household appliances and instruments, only 16.8 percent can be included among specialized enterprises.

Objective prerequisites for the formation of sub-branches of household machine building have existed for a long time, but so far they are not being realized everywhere. For example, more than 300 enterprises of the country under the jurisdiction of 30 ministries and departments engage in the manufacture of electrical goods. And 6 ministries are recognized as the head ministries for specific kinds, although their proportion in the overall volume of output of electrical goods in the country ranges from 33.6 percent in the Ministry of Machine Building for Light and the Food Industry to 1.2 percent in the Ministry of Construction, Road and Municipal Machine Building. The control of the production of metal items for cultural and domestic purposes and household use is even more decentralized.

Along with specialized enterprises, many shops of machine building plants manufacture complicated household equipment. In Kharkov at the present time there are three large specialized shops which produce color television sets, stereo tape and radio sets and tape recorders (the volume per one shop amounts to 5-15 million rubles and the number of workers--(500-800)). There are specialized shops in other Kharkov enterprises (the Electrotvazhmash plant, the electrical machine and electrical equipment plant, Elektromashina, and others).

The process of specialization of such shops takes place objectively, which is related primarily to the purpose of their products, the requirements on the aesthetic level, the peculiarities of the consumer demand, and also the type of production. At the Kharkov aviation plant for a long time various consumer goods have been produced in separate sections that are dispersed throughout the enterprise. In 1965 they organized a shop out of 11 sections with the usual shop services, and in 1976 they created a special service for control of the production of consumer goods headed by the deputy head engineer. In essence a small "plant within a plant" was formed. But it is still too early to speak about organizational independence of such production (of course, while retaining the cooperative ties with the main shops of the enterprise).

Thus an analysis of household machine building in two typical oblasts--Kharkov and Kalinin--makes it possible, it seems to us, to speak about large reserves related to specialization of the sub-branches of household machine building. The branches of machine building are not fully oriented toward producing particular items, consolidating and optimizing the production of goods for the population, organizing specialized shops for producing these goods at machine building enterprises that have been called upon for assistance, further developing specialization in particular objects, creating enterprises for manufacturing all kinds of procurements or deepening specialization in parts (components).

The utilization of the aforementioned reserves will make it possible to raise the organizational and technical level of the production of goods for the population in machine building and to improve the technical and economic indicators of the activity of the enterprises.

## What Impedes Increasing Output?

Only at specialized enterprises do workers in the administrative sphere receive the same report information as they do at machine building enterprises that manufacture products for production and technical purposes. In all other cases the data from economic accounting (primarily bookkeeping accounting), as a rule, does not make it possible to analyze in depth the production and economic activity of the shops, sections and organizationally separate productions.

The situation is exacerbated by the low level of economic work at many enterprises with single-unit or small-series types of production that also produce goods that are in mass demand. At these enterprises there is a significant proportion of experimental statistical norms, they do not have experience in organizing and planning mass flowline production, and control over expenditure norms is weak.

Under these conditions it is expedient to expand the application of statistical methods of accounting, control and analysis of the utilization of the most important kinds of production reserves: equipment, materials and labor force. The poor effectiveness of the traditional methods of consolidated accounting frequently leave production reserves undisclosed.

Reserves for loading equipment can be revealed most fully with the help of selective time-and-motion study. By this method, which was applied at 15 Kharhov enterprises, it was established that the average level of extensive utilization of equipment in the sections and shops for producing consumer goods is equal to only 24.5 percent, or less than 6 hours of work per unit of equipment. And in individual shops of the Elektromashina and Yuzhkabel' plants each unit of equipment operated less than 3 hours a day.

The coefficient of shift work of equipment at 15 enterprises and shops of household machine building is equal to 1.14, or 18 percent less than in machine building in the country as a whole. And for 6 objects of household machine building its amount turned out to be less than 1, which is explained by the existence of superfluous and little utilized equipment. From 30 to 52 percent of the overall quantity of equipment was not operating at all, for various reasons, on the day of the inspection.

The poor dissemination of the multi-machine tool form of service in sections and shops for consumer goods also reduces the amount of the coefficient of shift work. This progressive form is almost not applied at such extremely large Kharkov machine building plants as the tractor and aviation plants and Elektrot'yazhmash. Yet at specialized manufacturing enterprises (for example, the Kharkov bicycle plant) multi-machine tool utilization includes up to half of the stock of equipment.

The low values of the coefficients of intrashift utilization of equipment and intrashift idle time, and the utilization of working time by 32-40 percent are explained by several factors. In the first place the level of skills of machine tool workers is low (it is approximately one-fourth of a category lower than the category of the work that is performed). In the second place, there is a



high proportion of experimental statistical norms whose fulfillment requires that the workers provide the necessary level of intensiveness of labor. In the third place, flowline production methods are not widespread enough. In the fourth place, equipment is utilized extremely ununiformly both in space (among various enterprises) and in time (10-day period, week, day).

The minimum and maximum amounts of intrashift idle time vary within a range of 5.5-fold. And the average amount of the given indicator for 15 enterprises is equal to 35 percent. There are even more significant differences in the hours of the working shift. Thus the coefficient of variation of the proportion of intrashift idle time in the shop of the Kharkov Elektrozhamash plant is 56 percent. At this and a number of other enterprises there is unsatisfactory preparation for the beginning of the shift and poor provision of the working positions with billets, materials, instruments, adaptors and means of lifting and transportation.

The structure of intrashift idle time for specific reasons, register directly in the process of conducting time-and-motion studies, is shown in the drawing.

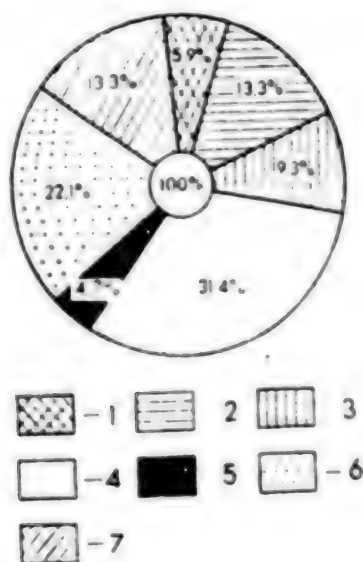


Figure. Structure of Intrashift Idle Time of Equipment of Enterprises Manufacturing Goods for Cultural and Domestic Purposes

Key:

1. Disrepair, nonplanned repair
2. Lack of materials and billets
3. Lack of instruments, energy, means of lifting and transportation
4. Idle time of less used equipment with periodic operation
5. Absence of workers with permission from administration because of illness
6. Idle time caused by the worker
7. Idle time for other reasons

The application of selective methods for directly studying the operation of equipment leads to a clear recognition of the fact that in the absolute majority of cases the reference by the enterprises to their lack of free capacities, areas and equipment (and this practically the most frequently encountered argument against expanding the output of consumer goods) is groundless.

The utilization of equipment at enterprises and in shops for household machine building can be improved as a result of direct norm setting and planning of the load on equipment. To do this it is necessary first of all to have centralized intrabranch normatives of the proportion of nonoperational equipment (during planned preventive repair and reserves equipment) and the number of machine tool hours that are to be worked by a unit of existing equipment each day, each week, each month and each year. Such indicators should be introduced into the overall number of planning indicators.

It is also necessary to have a system of benefits and incentives that are granted to enterprises which improve the indicators of the operation of equipment and a system of sanctions against those which do not do this. It would be useful to introduce state control over the utilization of equipment, perhaps including the formation of a nondepartmental control inspection team. These measures will increase the effectiveness of norm setting, planning and stimulation as well as the entire process of control of the operation of equipment.

**A Shortage of Metal? No, A Surplus!**

Selective methods are also applied in principle when approving norm setting for the expenditure of material resources, controlling their useful utilization, and revealing reserves for reducing the material-intensiveness of household machines and instruments. To accomplish this special inspections can be organized, which are conducted by the method of direct statistical observation of the expenditure of basic and auxiliary materials directly at the working positions.

It was precisely with these, for example, that it was established that the present scourge of household machine building enterprises is the prevalence of plus tolerances which do not go beyond the limits of the upper deviation established by the GOST. For this reason alone certain enterprises fail to obtain hundreds and thousands of tons of rolled steel each year. Consequently, any systematic deviations from the average parameters should be objects of statistical study.

An experimental investigation was especially organized for reserves for reducing metal-intensiveness of 8 Kharkov enterprises and in household machine building plants. Billets of 154 kinds and the same quantity of parts that are included in 30 kinds of items were subjected to direct statistical observation. The overall metal-intensiveness of the annual output of the items that were inspected is equal to approximately 9,000 tons of ferrous and nonferrous metals and their alloys. The volume of output at the enterprises that were inspected amounted to 31.1 percent of the overall volume of output of these goods by household machine building in Kharkov Oblast. Thus the selective inspection of reserves for reducing metal-intensiveness that was conducted is fairly representative. We clarify that the overall nonproductive losses of metals reach 500 tons or 5-6 percent.

One might get the impression that the overall nonproductive losses of metal because of shortcomings in norm setting, accounting and control are not so great. For individual parts they amount to only a gram. But one must not forget about the specific nature of household machine buildings, where mass type of production is typical. At the Kharkov electrical mechanical equipment plant the deviations of the actual masses of billets and parts from the normative with respect to three parts of an electric iron amount to 8-25 grams. But with an annual program for producing 2 million electric irons these deviations can lead to a loss of 150 tons of metal worth a total of 47,000 rubles.

The overexpenditure of metal in the prepared item cannot be regarded as unappreciable either. This does not lead to excess wastes (shavings), but for the enterprise it means a nonreimbursable loss of the resources allotted to it.

Moreover, an overexpenditure of metal as a result of surplus usage arises as a result of the utilization of erroneous norms. For when one is oriented toward increased calculated norms in the technical specifications, the bookkeeping office of the enterprise sanctions it and the material and technical supply service for production allots the procurement shops more than the actually required quantity of charge materials, rolled metal and so forth. This gives rise to an inefficient attitude toward material resources, the possibility of illegally covering some of the rejected work, and the formation of artificial "savings" as compared to expenditure norms.

Both the numerous cases presented in this article and others which were not included confirm the real need to reveal the full amount of nonproductive losses of resources of metal and all sources of them. These losses can be found for accounting and analysis by the method of direct statistical observation of the utilization of materials. It augments well the long known methods of accounting and analytical work: documentation of deviations from norms (on the basis of limit-ration cards), documentation of batch cutting (accounting for cutting in batches) and the taking of inventory. This method is a sufficiently universal means of directly checking on the reliability of existing material norms, controlling the process of useful expenditures of materials on the spot and revealing additional reserves for economizing on them.

The representative selective inspections we conducted and partially described in this article revealed many unutilized reserves for economizing on material resources in household machine building. The coefficient of the utilization of metal in household machine building is appreciably lower than the average for machine building in the country as a whole. The design metal-intensiveness of many domestic household machines and instruments exceeds the metal-intensiveness of the more progressive models by 25 percent.

We have basically completed the initial period of the establishment of the branch and created a broad network of enterprises and shops for specializing in particular objects. The possibilities of further extensive development of the branch through enlisting new machine building enterprises into the output of consumer goods are exhausted to a significant degree. The main source of

quantitative and particularly qualitative growth of household machine building is intensification of the utilization of all resources on the basis of the acceleration of scientific-technical and organizational progress.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111



## TOO MUCH RED TAPE HINDERS INTRODUCTION OF NEW & IMPROVED CONSUMER GOODS

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 124-134

[Article by G. V. Rozenberg, department chief, and V. P. Kovylin, head designer, special design bureau of printing machine building (Odessa): "The Paper Carousel Turns"]

[Text] In the production of consumer goods too much time now goes for the design stage. And the system for developing and coordinating the output of new goods is not being simplified, but complicated. The introduction of the YeSKD (Unified System of Design Documentation), strangely enough, has complicated the matter even more.

At first glance it seems that it is enough to clarify the demand of the trade organization for a particular item, to develop technical specifications, to produce the fittings--and one can produce the product. But in practice for any item, even the simplest (like a hook for a catch), it is necessary to develop a technical assignment, technical specifications (or technical description), a program and methods of testing, a chart of the technical level and quality of the product, and other documents.

In the majority of cases it is also necessary to obtain official permission from higher organizations, special commissions and institutes to apply particular kinds of coatings, materials and batching items, as well as permission from public health and sanitary-hygienic institutions.

Are all these documents really so necessary?

Let us take the technical assignment. It is developed after obtaining an order from a trade organization and the agreement of the manufacturing plant to produce the item. It reflects all the information about the design, the materials that are used, and the requirement for quality and packaging. The technical assignment must be officially coordinated with all involved organizations (usually there are 4-6 of them) and approved by the head organization of the developer and the manufacturer.

It appears to be a useful document. But, on the one hand, its coordination and approval requires a large amount of time (from one to three months), especially if the papers are sent through the post office, without "pushers." On the other

hand, the developer sometimes does not know what needs to be reflected in the technical assignment since usually when producing consumer goods, as distinct from industrial equipment, there is no stage of experimental design and research work, on the basis of which the technical assignment is drawn up.

But also, as experience shows, for many uncomplicated consumer goods, for example, toys, one can do without a technical assignment. Thus in the branch standard, "Development And Organization of Products For Production. Toys" in point 2.1 it is written that the technical assignment is developed only for especially complicated toys which contain radio or electric equipment, and for all the rest the "Methodological Instructions For Determining the Quality Level of Light Industry Products" can be used as a technical assignment. In spite of the immense products list and the "conglomeration" of toys that are produced, a unified document has been created which formulates in broad outlines all the requirements for their production.

We do not know how workers who produce toys have managed to coordinate their OST with the USSR Gosstandart, but only the aforementioned point of this OST on the scale of the country will save many hundred thousands of rubles.

When creating a program and methods of testing the developer must do the same thing as in the stage of the technical assignment. But why all these documents if it is completely adequate for preliminary (plant) testing to examine the model of the item in terms of the correspondence between the blueprints and the instructions for operation. The items must be tested on receipt in the base organizations for standardization or state testing centers on the basis of standard instructions or methods. But there is no need to create an individual document for each item each time.

Technical specifications (TU). This is a stumbling block, which many items have not been able to get around since the coordination and approval of this document takes more time and care than the preceding ones. The technical specifications are to regulate the relations between the client and the manufacturer. But, honestly speaking, let us try to remember which one of us has used them like to an arbitrator when returning a poor-quality iron to a store or carrying out the routine guaranteed repair of a television set?

The basic parameters, and also the rules for utilization which cannot be violated, are presented in the instructions for operation or the certificate. In difficult cases one can check to make sure that the items correspond to the blueprints.

It is the blueprints (for the item is manufactured from blueprints and not from technical specifications) and also the instructions for operation or the certificate that contain all the necessary and sufficient information for manufacture of high-quality goods or for any other kind of control. Moreover, the stores never have technical specifications. In the majority of cases trade bases do not have them either (especially when the bases purchase goods in other oblasts). Who needs the technical specifications then? Strange as it may be--nobody.

One can foresee the following objection in favor of technical specifications: they contain the rules for receipt and methods for control and testing, and also for packaging and transportation. But why create technical specifications for

that? For only the plant's OTK needs methods of control. This section should be published in the form of a special plant instruction, individually for each item.

As for transportation and packaging, this question bothers only the trade base, which is interested in seeing that the cargo is well packed and delivered entirely and in good condition. The base can stipulate any requirements regarding this in an appendix to the contract for the delivery of the items, which is concluded between the manufacturing plant and the base. This document can be developed and coordinated between the plant and the base at any convenient stage of the development of the item, for example, before the development of the blueprints.

Thus annulling the technical specifications as such creates no difficulties for the production of any items that are in mass demand. In this case the manufacture should proceed on the basis of a set of blueprints that are approved under the established policy. It is precisely the set of blueprints that should become the basic document for all instances--from the manufacturer to the immediate consumer. All disputes regarding the quality of the items will be resolved because of the availability of a standard model, a set of blueprints and instructions for operation. An all-union information institute will store instead of technical specifications the certificate or instructions for operation (application), which will contain more detailed information than the technical specifications, and for the simplest items (like a hook) when a certificate or instructions do not need to be developed--the blueprints of the items. One of the most difficult barriers on the path of the goods will be eliminated, a barrier which not only prolongs the time periods for assimilation, but also frequently impedes improvement of quality. The fact is that the technical specifications indicate specific kinds of materials as well as their specific makes, colors and parameters, and they also determine the number of parts and components of which the item consists.

If the enterprise wishes to use higher-quality, new, progressive material or, say, to replace several parts or an entire component with one which is more reliable and simpler, this can be done only when a change in the technical specifications has been developed, coordinated, approved and registered. And this means that it is necessary to ride again for many months (or many years) on the paper carousel. As a rule, no one will risk engaging in such experiments, and if changes in the technical specifications are developed, it is only in extreme cases, for example, when the deliveries of particular materials or batching items are stopped.

Thus the technical specifications, which were regarded as a necessary document that contains various data and requirements for the production of an item, turn out to be an unnecessary and harmful document when applied to many household goods.

The chart of the technical level and quality of the products (KU). Not having managed to appear in the form in which it is to be developed according to the YeSKD and the numerous branch instructions, this document has become a useless anachronism. Such is the unanimous opinion both of developers and of organizations that coordinate and approve them. All information about the item is drowned in numerous indicators and coefficients. The KU has become a document which does not reflect the actual level of the item.

With such confused methods of calculating all kinds of indicators which are figured in the form of abstract points and coefficients, one can determine the best item to be mediocre. But usually the opposite happens--a mediocre or even a poor item is given indicators that place it in the highest quality category.

One immediately forgets about "charts of the level" after the development and approval of the items, and they gather dust on the shelves of the archives. But the process of their development, coordination and approval is no less troublesome and lengthy than that of the technical specifications. Moreover, their development loses meaning also because frequently the head organizations and the base organizations for standardization do not have data for analogues, and not only foreign, but also domestic models.

It seems to us that "charts of the level" should be replaced by information about the technical level of the item from the head organization for a given kind of product or the base organization for standardization in conjunction with the corresponding service for technical aesthetics. This information can specifically point out the technical and aesthetic indicators in terms of which the item surpasses the best world models and those in terms of which it is not as good as they are. The information should also contain recommendations about placing the item in a particular quality category and improving the quality in terms of specific indicators in the future. This information can replace two different existing documents: "charts of level" and the conclusion of the board of experts concerning the consumer qualities of the item. And for simple items this information is not necessary at all. For them it is sufficient to have the approval of the branch commission for the quality of consumer goods.

As the practice of recent years shows, certain base organizations for standardization, not being in a condition to give consideration to the avalanche of all kinds of documents for various items, have been forced to violate the GOST and unofficially permit the output of certain of these items without the development of technical specifications and technical assignments. And this, in our opinion, is correct. The items become no worse because of this, and their introduction is accelerated.

Thus instead of developing numerous documents, the following clear-cut and simple system is suggested:

order from the client;

development of blueprints and certificate (operating instructions);

obtaining information about the technical level (except for simple items);

consideration by the branch (for the given kind of item) commission for quality of consumer goods;

production.

Another factor is the weak material incentives of the developers. The developers of industrial equipment receive remuneration from the economic incentive fund depending on the economic effect of the equipment that is created. This effect,



and, consequently, the bonus as well, can be very high. But it is either impossible to calculate the direct economic effect from the output of the majority of consumer goods (beginning with cufflinks and ending, for example, with sewing machines) or it is not very great. At the present time bonuses for the development of items in mass demand are calculated in the amount of 10-15 percent of the wage fund. Thus the developers, and many planning organizations are developers, end up in a disadvantageous position. It would be better to increase this percentage or to find other sources of incentives.

In order for the item which has been developed to be introduced rapidly, it is necessary to have direct material incentives both of the developers and of the production workers. Remuneration paid for the introduction can be determined in the amount of 5-10 percent of the sales cost of the first batch of items that is produced and 3-5 percent of the sales cost of the next two batches. And it would be desirable to extend these provisions not only to innovations, but also to traditional goods that are being assimilated for the first time at a given enterprise (clothespins, knives, irons and so forth). The amounts of the remuneration should vary.

Many new developments are not introduced because of the fact that the output plans have no specific names of new items which are to be assimilated. It is more advantageous for the plants to produce the same goods, which are frequently obsolete, without being concerned about updating the assortment or introducing new items from already developed plans.

In spite of the existence in the oblast and republic trade bases of market divisions of the All-Union Institute of Market Conditions, and in spite of trade fairs, the demand for goods is still being determined approximately, and trade cannot guarantee it even for the near future (2-3 years). The production of these goods on the whole is carried out randomly. This takes place because the All-Union Institute of Market Conditions, in conjunction with republic services, has not become a unified coordinating center. In our opinion, the organizations for market conditions and trade should annually submit to the branch ministries and departments a list of items which these ministries must mandatorily include in the production plans for their enterprises, with an indication of the volumes and time periods for assimilation.

Summing up, one can say that in order to regularize the output of consumer goods, increase their quantity, improve their quality and improve their assortment, the following measures are necessary:

maximum simplification of the development and organization of the production of the items and reduction of the number of normative-technical documents to a minimum;

a clear-cut system of material incentives for the development and introduction of consumer goods into production, which envisions a significant increase in the material incentives for developers and producers;

the introduction of provisions that make it incumbent on the enterprise that produces various kinds of goods (including enterprises for which they are the basic products) to indicate in their annual plans the specific names of items that are earmarked for production.

To prohibit excluding from production plans any kinds of goods without coordination with the corresponding trade and marketing organizations;

transformation of the All-Union Institute of Market Conditions into a unified all-union center which coordinates the production of goods in the country.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111

## STYLES, RANGE OF CLOTHES & ACCESSORIES NEED IMPROVEMENT

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 135-136

[Article by A. Sultankulov, engineer (Frunze): "How to Keep Up With Fashion?"]

[Text] I wish to share my ideas about the output of goods that are in mass demand. One frequently hears that someone has managed to obtain a Japanese scarf, a Finnish suit, a Belgian coat or Austrian boots . . . these goods influence the formation of the tastes of the consumers and the development of domestic fashion. Unfortunately, many of our goods--sewn items, footwear and haberdashery--are still not as good as foreign ones. As a result in the stores there are many millions of unsold goods which do not meet the demands of the population.

But where is there a domestic hat or sheepskin coat that can compete with foreign ones? We see such items in fashion magazines and demonstrations of fashions. Our country has the raw material resources for producing them. We have cotton, leather, sheepskin, fur, flax, wool and many other things. But what must be done in order to transform them into high-quality items which will be pleasant to wear?

In the first place it is important to follow fashion. It makes quick leaps from mini to maxi, from narrow skirts to broad ones. Quite recently everyone was wearing synthetic fabrics, but now they want cotton, and our industry must be prepared to adjust production for these changes.

Who decides which clothing to produce so that it will be as good as imported clothing? These are the artists, planners, producers and merchants. Is the group of these people responsible for fashion large enough? In my opinion the composition of expert councils that make decisions regarding the production of new fashions should be extensively expanded so that it will include fashion designers, other designers, technologists, economists, sales experts, trade workers, clothing designers, sociologists and other highly qualified specialists. And they would make the final decision about the introduction into mass production of one kind of clothing or footwear or another, being oriented toward the results of the sales of experimental batches of items.

Recently the country has adopted a number of provisions concerning stimulation of the output of improved-quality items (the N index), the production of experimental batches and the establishment of contractual prices. But these provisions are being implemented mainly by conscientious and enterprising managers. And what happens to those who work in the old way? Therefore the introduction of new economic levers that stimulate updating the items can significantly change the attitude toward the quality of goods and the degree to which they correspond to fashion.

Economic levers should also be introduced for updating items. For example, if an item has not been sold for a month, the price should be reduced by 10 percent, six months--by 20-25 percent, and more than a year--up to 40 percent. These amounts can be taken from the production reports of the manufacturing enterprise and trade expenditures can be reimbursed.

Moreover, the matter would be improved by more frequent open competition--reviews of the best models of clothing and footwear. Here it is quite important to study the demand and to know the opinion of the population about one model or another. To this end we should organize special issues of fashion magazines where the purchasers are not only spectators, but also active participants, and would share their ideas, wishes and . . . their own models. Authors' certificates should be issued for new models of clothing and footwear.

The network of training institutions for training artists, modelers and designers for light industry items is still poorly developed. It will also be necessary to revise the present incentives for this category of workers. So far nothing is heard, for example, about honored tailors, modelers and designers in light industry.

To dress fashionably is a matter of taste. Nonetheless, fashion should be planned and can help to determine whether an enterprise operates efficiently or not.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111



## RAPID LABOR FORCE TURNOVER DECRIED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 137-150)

[Article by V. A. Skripov, sociologist (Vilnius): "Instability"]

[Text] There are many leading enterprises in our country. Their experience is studied by science and their example is followed by many collectives. But today I wish to discuss something else--the enterprise that has lost its future. Do not try to guess the plant I am speaking about. Although we are describing a specific enterprise, the same symptoms of labor turnover can be found in various places, although not necessarily in such a concentrated form.

. . . When you try to imagine our enterprise through the eyes of an outside visitor you come to the conclusion that even a veteran production worker would have a favorable opinion of it from his first impression. But nonetheless the enterprise has long been considered chronically ill. Not giving up the ghost like some technically backward little plant which is producing the only product it can, but one which has long since ceased to be used, but precisely ill. This means that the plant is not included among the leaders, and the plan is sometimes endured and sometimes not (depending on whether or not they have managed to adjust it). This also means that people work at it for many years and even leave as veterans, but they experience no love for their plant and speak about it with disdain--"our office" . . . this is a typical example of an enterprise that is operating under conditions of instability.

Instability . . . what is this?

This word is frequently used in production jargon but it has no analogue in scientific use, although it designates a phenomenon that is quite real and typical with which we are familiar in our daily practice. Like any concept in everyday awareness, it is extremely diffuse. In order to give it a strict meaning, let us try to figure out the features of the business style and interrelations among workers who have taken a journey through the enterprise.

Without A "Philosophy"

The morning operations schedule is a kind of cardiogram of the enterprise. It shows not only the course of the production process, but also the character of the interrelations among managers and the style of solving business problems.

Let us turn on the selector, and the air is filled with the harsh voice of the head dispatcher: "When will the 201st bracket be ready? Where is washer 0-7? . . ." In response--contradictory replies, references to related workers, second and third voices join in, a skirmish breaks out, which is usually quieted with a set of phrases that are saved for all events in life:

"Wherever you want to!"--in response to the question: "Where do I get it?"

"Decide for yourself!"--in response to: "What do you want me to do?"

"Stop the demogogy!"--in response to attempts to refer to normative documents--time periods, schedules and provisions.

If the argument continues longer than usual, at some moment it is interrupted by an insult from the selector who cuts off the blabbing manager, and there follows a threatening reminder of how one should behave oneself.

Things blow up, new deadlines are set to replace the ones that were not met, but still you do not lose the feelings that the problems are not solved and that this is only a regular round of redistribution of responsibility. Unrealistic assignments hang in the air, accusations are cast against somebody, the silence in response certainly does not mean that they are justified, there are appeals to someone's conscience. . . and behind all this one feels a desire to obtain an illusory calm until tomorrow, and there is an external demonstration of some measures that are supposed to have been taken.

The next day it is the same all over again. Passions flare, reaching a peak by the end of the month when many people cannot get along without Valium. But the outcome is always the same: broken schedules, change of products list, failure to carry out deliveries, overexpenditure of the wage fund. And it is all crowned by the storm, when young specialists and secretaries throw themselves into the breach, when workers tempted by piece-rate and overtime wages, do not leave the shop for three shifts in a row. And finally--a sigh of heavy relief: "They have made it!"

Now comes the time of absenteeism, peaceful conversations about fishing and football, and anecdotes with friendly laughter among those who yesterday had accused one another of all the mortal sins.

This picture of cycles of panicky tension and then placidity is sadly familiar. It is a style of work in which there is no place for serious analysis in order to find even one of the multitude of dead ends. When they are feverishly working they say that the time is not appropriate. And then they do not want to spoil the brief peaceful respite by thinking about their own incompetence.

The most typical feature of the psychology of production workers who are overwhelmed by instability is a profound skepticism about the possibilities of working for the future, with a glance into tomorrow, and the planning of scientifically substantiated methods are perceived in their environment as activity that is purely for show--a "philosophy" which is clearly declarative in nature. But true, "real life" functioning of production, according to

their deep conviction, is regulated impromptu, is controlled by the will and the shrewdness of efficient minds. They oppose experience and intuition to strict calculation, and customs, traditions and ingrained principles to formal prescriptions. In this environment any person with skills of scientific analysis is declared to be the "bookish," "unrealistic" person of a systemitizer. They proudly juxtapose to him some kind of coarse manly "man of action" with a strong ability to work, extraordinary enterprisingness and "common sense," on whose strong shoulders the economy of our enterprise will rest. The plant lives because of the strong-minded people who have not become accustomed to "discussion." Let there be breakdowns, interruptions and errors, but he will still meet the plan, breaking through the wreckage and storms of disorganization; moreover--slowly, but gathering force, he will gradually improve the products and, consequently, fulfill his main mission.

Observing our administrators for years one cannot help but note the signs of a certain cliquishness in the recognition of a special, "serious" style of thinking and behavior, and its role in the life of the production collective. One senses in them a haughty deep conviction that only because of this prosaic, thankless, nerve-racking work which cannot be confined to an 8-hour day, similar to a battle, "which is their cross to bear," that the plan was made at all times. And all "lofty phrases" about the science of administration is from another echelon, whose paths proceed in parallel somewhere of their own accord. In their free time our administrators can also talk about the imperfection of their administrative methods, about routine, and about advanced experience, displaying the proper self-criticism, they can sigh and complain about the "damned instability." But all this is no more than lip service to the spirit of the times. And when it is necessary to "come down from the clouds," all this is forgotten as idle talk for which a "businesslike person" has no time.

#### The Main Thing--Willingness

The shop chief weighs the paper with indignation: "Just look: the shop capacities have been calculated and with normal work we can produce 27,000 norm-hours; last month we worked 30,000. And this month they added on another 13,000! Well, tell me how I am supposed to regard this, when everyone knows that the planners have already pushed us to the limit?!"

Is this really true? Explaining the logic of this planning, our planner throws up his hands: "And what do you want us to do if the plant has received a plan which is utterly impossible? Well, you go through the shops. I take the psychology of the production workers into account: the more you plan, the more they do . . ."

A familiar situation. The tactics of job deception that have taken form on this basis have become a customary phenomenon for many. The same shop chief time is limited to a momentary outburst, intended more to make an impression on an outsider, and not to go to the planners or directors to prove that the figures that were obtained are absurd. He does not go there for the simple reason that from experience he knows: the figures will be adjusted. He also knows that in the planning division they intend to make the adjustment in the first place and they will resist it only for appearances. And in the shop

they know that the main board will also have the same planned willingness, for they do not have confidence that the plan is realistic either. And where it all began is not clear from here: you crane your neck and your hat falls off . . .

One more lesson has been assimilated by the experienced production worker: If you say something or are worried you will accomplish nothing and your reputation will be ruined. But if you do not b.istle up, under this unrealistic plan, underneath the tormented pose of someone who is crushed by the excessive burden of the subdivision, it is possible to figure something out. For example, break the limit of job-rate payments, allow overexpenditure of the wage fund, and achieve the willingness of the division of technical control. One cannot receive enough benefits when both sides do not strive to establish the possibilities clearly in figures of strict economic accounting, but conduct themselves like circus wrestlers who are only demonstrating conventions that were stipulated beforehand, and that there will be no winner.

An interesting peculiarity of the style of business relations in our enterprise is the desire to resolve the matter while avoiding formal channels. The collective morality regards attempts to act while adhering to official prescriptions as an indicator of a different tone. In counterbalance to this is the unwritten "code of behavior" whereby it is acceptable to take advantage of personal contacts and act "as if this were a family." The performance of functional duties assumes the nature of personal services and interrelations arranged around sympathies and antipathys, mutual compliance and mutual indulgence. To complain by means of formal rights, for instance, to fill out a complaint according to the system of defect-free labor, to demand the fulfillment of direct duties by referring to job instructions, and to find the reasons for stoppages and the degree of blame is considered a manifestation of the "inexperience," quick temper and immaturity of the manager.

The essence of this kind of morality, apparently, consists in that under the conditions of poor organization of production, special compensatory forms of interrelations are developed among people, which makes it possible for the system to be in a state of balance, if only a shaky one, and to create the appearance of external well-being. In order to fulfill the plan "at any price," the administration has to allow various violations of the norms. For instance, to give the mark of "good" for receiving rejected parts, to close one's eyes to the violations of technology, to organize overtime work, and so forth. On the other hand, our administration avoids taking on the responsibility for carrying out certain direct duties (for example, providing for continuous supply of materials and blanks for shops and brigades, eliminating idle time because of tardy repair of equipment and so forth), but at the same time it will call upon the workers to accept extremely difficult plans, to economize, to develop collective forms of labor organization, and to improve labor discipline.

Our administration essentially proceeds in two languages--official ("correct") and the unofficial, "incorrect," but realistic language of administrative practice, and the managers must learn to distinguish when an official order must be taken seriously and when it can be ignored. The existence of a powerful layer of informal relations helps to solve this delicate problem. In the traditions, customs and stereotypes of behavior in these relations lie the keys to deciphering that which cannot be discussed in the language of decrees and orders.



The code of informal relations contains a whole number of "truths" which help to smooth over those contradictions which appear everywhere between word and deed. This is a unique "lubricant" with which it is possible to maintain a certain psychological stability and a more or less smooth system of unsystematic work under conditions of organization of the production process which is shakey and going to pieces.

The aforementioned shop chief also refuses to "make a fuss" because he knows from experience: even if he does not fulfill the plan and cannot adjust it, he will only suffer a little bit or he might not suffer at all. When analyzing the orders of the director we encountered a curious phenomenon. It turns out that the progressive piece-rate system of wages is certainly not the only form of material incentives, and not only the most important one. In addition to it there are at least 10 various ways of paying bonuses: for especially important assignments, for economizing, for the introduction of new technical equipment, for introducing efficiency proposals, and so forth. Sometimes the overall sum of them exceeds the amount of bonuses for fulfillment of the plan several fold. Those managers who have been deprived of bonuses for the results of the month still receive significant payments for other things which more than compensate for the "harm."

When there is no clear-cut system in the work, which strictly establishes the degree of responsibility of each worker to the other, an atmosphere of indefiniteness is created, in which nobody can guarantee that he will not be guilty of a stoppage at any moment. Hence there arises the tolerance of poor work, as if paying in advance for one's own rights to cause breakdowns. And the "code" of interrelations allows the sharpest mutual accusations and even mutual deception, but it condemns an attempt to give a really serious analysis of the causes of unsatisfactory work (along with the most superficial and simple ones) or to discover their sources. It is necessary to "get used to" various kinds of nonsense, failure to fulfill orders and unfair demands, and simply not take them to heart. Participants in this kind of game have agreed to put a taboo on any doubts regarding the arbitrary impromptu style of instability. And this solidarity against a background of routine is the basis of its viability.

#### "Economizing on Energy"

Another unstated postulate which guides the workers of our enterprise in all of their actions is the principle of "economizing on energy." The economic underpinning of this phenomenon is fairly profound and has been comprehensively analyzed in many published articles. They point out that planning from the level already achieved and the inadequate effectiveness of legislation for reinforcing autonomous financing relations, the imperfection of the price setting system and a number of other serious shortcomings of the existing mechanism for economic administration cause the enterprises to underestimate and conceal their production reserves in all ways. "False poverty" has become not simply a reaction of those whom bitter experience has taught to have a "nest egg," but has also become a kind of fashion which has spread to subdivisions whose well-being nobody is threatening. Many managers from plant administration regard their show of being overloaded almost as an indicator of solidity and maturity of the subdivision of which they are in charge. It is thought that if one does not put on a show before accepting an assignment, if one does not

argue with a client, proving that "this is not our work," they will stop respecting him. To this end they write on business stationary the resolution "let it wait," and the doors of the division are closed with strict signs that establish the hours for "receiving visitors," and for long periods of time between these hours they are taken up with the mysterious "work with documents."

If line managers inherently have a negligent attitude toward paperwork (they squeamishly shove it into a remote drawer of their desk, they lose it, and they become a sorry sight--crumpled and worn), on the periphery of production the picture is almost the opposite. In the functional services papers are most frequently neatly filed, and they know the official instructions and provisions concerning the services by heart. They can handle these papers with the same diligence as they handle their opponents, and they are carefully studied to discover something: was "someone else's work" not shoved off on them, did they not end up in "questionable territory," regarding which it is necessary to demonstrate their diplomatic capabilities?

"Economizing on energy" is manifested especially clearly in the relations of traditional services to a new subdivision which does not yet have clearly enough defined functions and status, for example, the service for scientific organization of labor, the sociological laboratory, the bureau for control of the quality of labor, and so forth. Almost every subdivision considers it a duty to express suspicion regarding the load of the "newcomer" even when this subdivision is trying to transfer some of its responsibilities to the new one. They send the new subdivision any "incomprehensible" document that has come from outside; any measure which requires thinking about whom to entrust it to or how to divide it up among several subdivisions is again given to the new subdivision.

Here are a couple of examples of instructions which went to the chief of our division for scientific organization of labor: to order furniture for the offices, to develop a system of defect-free labor and provide operational control over efficiency; to prepare branch "days of quality"; to check on the work of the dining room; to analyze the capabilities of instrument production, and so forth. The logic of instability, in whose atmosphere the only decisions that are considered valuable are those that produce an immediate effect and patch up the latest mistake, is manifested in a scorn for the subdivisions whose activity has to do with research, analysis and efficiency proposals, and a desire to "fill in its load" with various kinds of functionally irrelevant instructions which for some reason have been "suspended in the air" and which can most simply be transferred to this subdivision.

The organic lack of acceptance on the part of our directors of any more or less serious attempts to deal with the reasons for the regular interruptions of activity in the production or social life of the collective leads to a situation where systematic analytical activity, the introduction of innovations, and attempts to improve the system of administration, regardless of the will of the people who are handling this, assume a formal nature which is purely for show. But this activity is not driven out; on the contrary, staffs and resources are allotted for it, it is discussed approvingly from the tribune, and splendid advertising is created for it. But the true, involved enthusiasts sooner or later discover that all the energy is spent in vain since it either dissipates

in remote desk drawers on papers that have been "taken under advisement" or its results are so thoroughly driven out from "specific local conditions" that the only thing that remains of the idea is the name.

Under these conditions the workers who are called upon to engage in improving administration (workers for scientific organization of labor, sociologists, programmers, engineers for organizing socialist competition, psychologists and so forth) must either be satisfied with fruitless paperwork or compromise and engage in secondary issues, dusting off and improving the appearance of old, traditional plans without any radical change or restructuring. Then the surrounding psychological atmosphere gives them the opinion that it is precisely these secondary, nonradical issues that constitute a useful sphere for the application of labor which will in some way justify their position in the structure of the enterprise. They have to write reports which profoundly "plan" the natural development of the enterprise according to the logic of random movement in which, of course, there is also a portion of success (for the impromptu method certainly does not preclude successful decisions), as a result of which any development in retrospect assumes the features of a well-thought-out future policy.

The actual control of production is reliably hidden in the shadows of the kitchen where they "cook up" strategy and tactics according to recipes whose secrets are strictly protected. Because of the "magical" actions of certain people in whose hands the secret levers are concentrated, miracles take place which cannot be understood by an outsider. In a couple of days our plan which was underfulfilled by half becomes overfulfilled, and they have found materials and batching items which nobody had counted on (in spite of limits and schedules), bonuses are paid which nobody expected to receive, and so forth. Confused more than once by these "miracles," the people no longer try to judge the situation in production from operations reports or from what they see with their own eyes, but take more stock in the information of the secretary of the head economist about the expression he had on his face when he returned from the ministry.

Administration according to the laws of instability forms special professional ideals in which profound theoretical knowledge gives way to knowledge of market conditions, a love of labor--to the ability to make useful acquaintances, creative potential--to enterprisingness on the spot and the ability to find loopholes, and executive efficiency--to tractability and indulgence. This pertains primarily to production managers, economists and supply workers who form something like a special nucleus within the administrative staff, on whose abilities and efforts the fate of the plan and the well-being of the entire collective seem to depend. They even have their own professional language, in which they do not fulfill the plan, but "do" it, wages are not earned but "regulated," the progressive piece-rate system of wages is not deserved, but "brought in," materials are not acquired, but "scared up," and so forth.

But it would be a simplification and an injustice to present these people as being individuals who are self-seeking and disreputable. The situation of instability undoubtedly contributes to various kinds of abuses and violations. But the majority of these production managers are motivated by noble intentions. They are sincerely trying to cope with their tasks as best they can, to bring

our enterprise out of its series of failures and create normal conditions for the work of their subordinates. But having fallen into the current of instability (having accepted it as a given and not having been able to counter it with an alternative conception of administration), these managers frequently forfeit the solid criteria of the state approach to the matter, replacing it with a local approach. The more so since certain defects of the economic mechanism create contradictions between departmental and state interests. In order to stop the avalanche of instability it is necessary to have a great deal of courage, will and time, in order to figure out and dig down to the sources of poor organization of production, to fight against the inertia in the thinking of one's colleagues and, perhaps, even allow a temporary deterioration of the indicators.

Of course there is never enough time. But once it sets in it is more and more difficult to fight against inertia. And having been overcome by it, the manager spends all his talent and will on careless labor and "small tricks," the result of which is movement which is like running around in circles.

#### In Search of a Solution

Perhaps an enterprise that operates under conditions of instability provides for high efficiency and stability in its work?

Of course not.

But another thing is possible--and we have tried to show this in our example: a prolonged existence with chronic interruptions and individual upsurges which is relatively "successful" and which is provided, on the one hand, by the high tension of human energy during busy periods and, on the other, by the possibilities of maneuvering which lie "at the junctures" of the economic mechanism. Thus adjustments of the plan is the reverse side of poor planning; liberal sanctions--the compensation for unregulated autonomous relations; low intensiveness and poor quality of labor, particularly administrative--the result of an inefficient system of material incentives, and so forth. Enterprises like ours are not separated out from the overall background, for they are hidden in the safe "golden mean" and therefore rarely become the object of criticism. This is precisely why they frequently create a sustaining environment for losses in the moral sphere, which are the most important under the conditions of a socialist society.

Instability forms a moral atmosphere of tolerance and adaptability to shortcomings, which brings a considerable proportion of the workers under its influence. In the social organism of the enterprise various kinds of mechanisms for compensation are developed, which make it possible to withstand poor administration relatively painlessly. In the material aspect this includes, for example, double payment for overtime and various job-rate payments which lead to unjustifiably high earnings with low rates of increase in labor productivity, absenteeism at the beginning of the month in amounts that surpass the amount of overtime that was worked, payment of fictional bonuses, and so forth. In the socio-psychological aspect this means the creation of a microclimate in which it is possible to be indifferent to labor and be self-seeking. Of course, in



a large production collective these characteristics are not noticed because along with them there is always some real concern about an unsatisfactory state of affairs, real labor enthusiasm and attempts to bring order, when people do not avoid shortcomings by resigning and regard the problems of the enterprise as problems of their own home.

But still the aforementioned factors are an alarming symptom.

Instability is also dangerous because of the fact that it creates the appearance of relative well-being for the boundaries are erased between major and secondary, and clear-cut moral criteria are lost: the state interest is subordinated to the interest of the section and plant, ordinary avoidance is called by the diplomatic term "businesslike enterprisingness," eclecticism is raised to the rank of a good thing, and healthy criticism and a desire for changes are defamed as trouble making and demogogy. People become less demanding and the illusion is created that there is no reason for concern, that "we are no worse than others," and, finally, it is not believed that the shortcomings can be eliminated at all.

Although, as was demonstrated, the roots of instability are largely related to shortcomings in the economic mechanism and the slow implementation of the economic reform, this in no way rehabilitates specific managers who are not capable of rising above the random current and have not developed a well-thought-out conception of tomorrow. The active creative position of those to whom the administration of production and production collectives is entrusted is a moral requirement of today when social tasks of administration have risen to the rank of economic tasks and are increasingly entering the foreground. There is a limitless multitude of examples of other kinds of organization of administration which show that in places where administration is carried out as a program for achieving clear-cut goals there is an advanced art of labor under the same general conditions.

"Instability has eaten us up"--we hear this phrase as a justification.

No! There should be no place for instability! This is an administrative illness, both economically and socially. Proof of this is the successful development of many of our enterprises, large and small, in light industry and in heavy industry, and in regions near and far.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111

## HUNGARY'S INDUSTRIAL PROGRESS HIGHLIGHTED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 151-163

[Article by Z. Roman, director of the Institute of Economics of Industry of the Hungarian Academy of Sciences (Budapest): Hungary's Industry in the Modern Stage]

[Text] Before 1970 40 percent of the growth of industrial production in Hungary took place as a result of increasing the number of workers and 60 percent, as a result of increased labor productivity. Now the number of people working in industry is almost twice the number of those employed in agriculture, while 30 years ago the ratio was the reverse. The proportion of people employed in Hungarian industry approaches the level of the FRG, the GDR and Czechoslovakia, and is among the highest. But labor productivity in Hungarian industry is almost half the level in the GDR and Czechoslovakia. Therefore one of the basic problems of Hungarian industry is to increase labor productivity considerably.

Another radical problem is improving the production structure. During past decades the proportion of machine building and the chemical industry increased at rapid rates. And there was a gradual reduction in the proportion of the textile, sewing and food industry. Nonetheless the proportion of the latter continued to be high because of the rapid increase in agricultural production. The existing structure corresponds to the structure of industry of the developed countries. The main task now is not so much to change the branch ratios as to increase the proportion of the more modern, high-quality items that are capable of competing on the world market.

The main path to improving the structure of industry for such a small country as Hungary consists in being included more actively in international division of labor. Hungary's economic policy is directed toward expanding foreign ties and increasing the proportion of foreign trade turnover. With intensive ties with economically developed countries there is a clearer manifestation of the weak sides of the Hungarian economy, its technical level, the ability of its products to compete and the economic effectiveness of production.

The aforementioned and several other problems brought about an objective need to conduct an economic reform. Its implementation began in 1968 although we had been preparing for it for several years before that. The reform increased

the independence of enterprises and the role of the market while retaining the decisive significance of centralized planning. The changeover to the new system of administration has produced good results: the initiative of the enterprises has increased, and market supply has improved with relatively high rates of economic growth.

By the beginning of the 1970's in the Hungarian national economy additional sources of labor force had been exhausted and intensive factors of economic growth came to the fore. Now all of the increase in industrial production takes place as a result of labor productivity. How does one maintain the increases that have been achieved while reducing the number of workers and carrying out the other tasks of the plan? The most important things here are balance in the economy and, above all, stability of the payment balance. Foreign economic ties are playing an increasing role in Hungary both as a result of the increased needs for imported raw materials, energy and technical equipment and as a result of the narrowness of the domestic market. Therefore efficient specialization and expansion of export production are possible only with increased involvement in international division of labor.

The dependency of the majority of Hungarian enterprises and branches on foreign markets is extremely significant. This is confirmed by the data in Table 1, where 61 branches of industry are grouped according to their proportion of exports, import consumption and additional imports in the gross output. Under these conditions any changes in the world economy are reflected in Hungarian industry, and these changes in the 1970's were unfavorable. The price explosion on the world market in 1973-1974, the decline of production and the great difficulties in selling products in capitalist countries, and competition from certain developing countries that had recently entered the path of industrialization--all this complicated the development of industry.

Table 1. Grouping of Branches of Industry in Hungary According to Intensiveness of Foreign Trade Ties

Indicator	Number of branches in which the corresponding indicator amounts to (in % of gross output):					
	10	11-25	26-50	51-75	76-100	101-150
Exports	24	17	16	4	--	--
Consumption of imported materials and equipment	28	19	13	1	--	--
Imported industrial products	20	20	11	3	2	5

At first attempts were made to weaken the influence on the Hungarian economy of negative factors and changes in the world economy, primarily the unfavorable dynamics of prices. This led to an expansion of the system of subsidies. Losses in the Hungarian economy during 1973-1978 as a result of the deterioration of price relations amounted to approximately 20 percent of the foreign trade turnover. We could not manage to compensate for these losses and had to take out

credit. The foreign and domestic conditions that were created for the fulfillment of the assignments of the 5th Five-Year Plan (1976-1980) required that we take more effective measures.

The Central Committee of the Hungarian Socialist Workers' Party, in a decree adopted at the end of 1977, determined the tasks for the country's economic development, relating them to the foreign economic strategy. Rapid improvement of the production structure was advanced to the foreground. But the positive changes took place fairly slowly. In 1970-1978 the annual growth rates of industrial production amounted to 5.7 percent.

Beginning in 1974 the deficit of the Hungarian foreign trade balance began to increase. It was especially significant in 1978. The decree of the Central Committee of the Hungarian Socialist Workers' Party, adopted in December, 1978, earmarked more radical measures for increasing the efficiency of the economy, particularly industry. It was noted in the decree: "The key issue for further development has become to provide for improvement of the balance of the economy by advancing factors of quality and effectiveness to the foreground more forcibly."

In 1979-1981 the overall growth of the national income and industrial production was insignificant since a line was followed toward reducing import deliveries from capitalist countries, a considerable proportion of which were raw materials, processed materials and semi-manufactured products. Because of this we managed to achieve a significant improvement in the payment balance. A changeover was started toward a more balanced path of development. This course was approved at the 12th Congress of the Hungarian Socialist Workers' Party and the 6th Five-Year Plan for the development of Hungary.

#### The Industrial Policy for the Future

The 6th Five-Year Plan for the development of Hungary (1981-1985) earmarked an annual increase in the national income of 2.7-3.2 percent and an increase in industrial production in the range of 3.5-4.1 percent. The secretary of the Central Committee of the Hungarian Socialist Workers' Party, F. Havashi, said regarding this: "The planned 3 percent rates of annual growth--keeping in mind international predictions--corresponds to the average growth rates of the CEMA countries. A striving for more rapid growth could lead to a deterioration of the balance since this would require imports which we cannot balance with profitable exports. If our work produces more results than envisioned by the plan and the foreign economic conditions become more favorable, the growth can be somewhat accelerated."

At the center of the economic policy for the 1980's is the task of restoring and strengthening the balance of the economy, including the foreign economic balance. In order to achieve these goals it is intended to increase the efficiency of public production and strengthen the export direction of its development. Thus we shall provide for an increase in the produced national income with a stabilization basically of its domestic consumption.

The plan earmarks concrete ways of achieving these goals:



the introduction of advanced achievements of science and technologies;  
a changeover to a new structure of production;  
increased ability of products to compete internationally;  
improvement of the qualitative indicators of development;  
stronger stimulation and increased independence and responsibility of production units;  
improvement of the administration and organization of production.

Hungarian enterprises establish their own plans, consulting with higher agencies. With such independence of the enterprises it is exceptionally important to have a system of prices and economic regulation. It should correctly orient the enterprises toward carrying out national economic tasks. Therefore the changeover to the new path of development has led to a need for an essential change in wholesale prices.

An ever larger part of the products of the Hungarian economy, including from industry, are directly given an international evaluation. Therefore unprofitable domestic production can be replaced with imports. It would be more correct for wholesale prices, in addition to internal expenditures, to take into account the prices of the foreign market. In a small country this is also justified by the fact that internal expenditures on various items are mainly determined by a small number of enterprises, and frequently only one. Therefore if the prices automatically include all (including unjustified) expenditures of the enterprises, they cannot become an objective measure. The new system of wholesale prices was introduced on 1 January 1980. It will improve and change. But even now there has been a favorable influence on the activity of the enterprises and the structure of their production: the expenditure of materials and energy has been better coordinated with the demands of the market, the international ratios of world prices, and so forth. Increased wholesale prices stimulate measures for streamlining the consumption of raw materials, processed materials and energy.

Among the other changes one should take note of the desire to strengthen the normative nature of regulation and to gradually reduce and curtail subsidies and benefits for enterprises. Sometimes the enterprises try to find the easiest path when producing some particular kind of product and turn to the state for help even when they could carry out their tasks with their own forces. This weakens the system of autonomous financing. In this connection a task has been set to utilize more fully commodity-monetary and market relations to improve the organizational structure of industry and the system of prices, to expand the independence of enterprises and to improve the entire system of administration.

Taking into account the experience of the Soviet Union, as early as 1947 Hungary developed the first Three-Year plan. Since that time the planning has continuously improved. At the present time long-range plans are being developed up to 1990 and up to the year 2000. Special significance is attached to the development of five-year plans, taking into account coordinating them with the national economic plans of other CEMA countries. But after the approval of the plans life makes its own adjustments and the predicted conditions can change. Therefore,

taking into account the frequent changes and the increased number of variants and alternatives, it is necessary to have great flexibility and continuity of planning.

Along with the increased independence of the enterprises, the interconnection between the plans of the enterprises and the national economic plan is also changing. Within the framework of national economic planning an important role is played by information about proposed directions of the activity of enterprises and their influence on the actual and expected development of production. In addition to the coordination of plans and the system of regulation, it is also necessary to have other means of the economic policy which contribute to achieving the planned goal.

#### Improvement of the Organizational Structure of Industry

In the organizational structure of industry an important place is assigned to concentration of production. Concentration of production in Hungarian industry has increased considerably since its nationalization. In state industry this process was most intensive at the beginning of the 1950's and in the 1960's. In the first stage there was a unification of small enterprises, and in the second--medium-sized and larger ones. As a result, in the first stage there was a considerable increase in the average size of the plants, and in the second stage--in the sizes of the enterprises (see Table 2).

Table 2. Change in Number of Enterprises With Different Numbers of Workers in State Industry

Years	Number of workers					Total
	Less than 50	51-100	101-500	501-1000	More than 1000	
Number of enterprises, units						
1950	438	210	474	142	101	1425
1960	108	139	644	250	197	1338
1965	46	86	343	111	254	840
1975	44	27	268	155	285	779
1979	36	14	190	148	314	702
Proportion of enterprises, %						
1950	34.9	14.7	33.3	10.0	7.1	100.0
1960	8.1	10.4	48.1	18.7	14.7	100.0
1965	5.5	10.8	40.8	13.2	30.2	100.0
1975	5.6	3.5	34.4	19.9	36.6	100.0
1979	5.1	2.0	27.0	21.1	44.8	100.0
Distribution of number of workers, %						
1950	2.2	3.1	24.2	20.1	50.4	100.0
1960	0.4	1.2	18.9	21.2	58.3	100.0
1965	0.1	0.6	9.0	7.9	82.4	100.0
1975	0.0	0.2	7.1	10.2	82.5	100.0
1979	0.1	0.1	5.2	9.8	84.8	100.0

During the economic reform of 1968 the structure of the enterprises and organizations did not undergo change. Concentration should be regarded as differentiation among the plants and industrial enterprises. The positive and negative consequences of concentration are manifested differently at the two different levels. International comparisons showed that when comparing countries with different levels of development one should clearly distinguish concentration in terms of the number of workers from concentration in terms of the volume of production. For example, the level of production of a Hungarian enterprise with 2,000 employees can be accomplished in Western Europe by an enterprise which has 800-1,000 employees, and in the United States--one with 600 employees. Therefore methods were developed for adjusting the data regarding the number of personnel when making these calculations. One should also point out that in the majority of branches of Hungarian industry the proportion of auxiliary services is higher, which in developed capitalist countries the enterprises receive from outside. Frequently when comparing one is deceived by the fact that attention is paid only to state or cooperative enterprises while in Hungary the industrial activity of organizations that are not strictly a part of industry (including agricultural), is extremely significant, and in some branches there is also private cottage industry and private farming plots.

The proportion of small plants in Hungary is fairly high. The problem is that the majority of these small plants use outdated technical equipment. This impedes their further development. The proportion of large plants is low. But concentration of the enterprises--regardless of the indicator according to which one estimates this --is exceptionally high as compared to any capitalist country. This is related primarily to the fact that more than 5,000 plants in state industry were combined into 700 enterprises. Only about one-fourth of the enterprises include only one plant (see Table 3).

Table 3. Distribution of Enterprises in Terms of Number of Plants, % of Total

Branch of Industry	Enterprises with number of plants, which employ 20 and more people.					
	1	2	3-5	6-10	11-20	21
Mining	23	7	27	30	10	3
Electric power	33	24	19	19	5	--
Metallurgy	66	19	--	11	4	--
Machine building	13	14	41	25	4	3
Construction materials	6	12	23	27	23	9
Chemical	24	20	37	13	6	--
Wood processing, paper and printing	33	27	28	7	4	1
Textile	15	19	32	24	10	--
Light	22	22	34	15	6	1
Food	43	13	21	16	2	--
Other branches	21	11	30	23	14	1
State industry	22	16	32	20	8	1

The structure of the enterprises should correspond to the purposes of the economic policy and the concrete system of administration of the economy. We now think that in the Hungarian economy too much attention was previously devoted to the growth of the enterprises and much less to questions of specialization and economy as a result of increasing the scale of production, concentration, and increased flexibility and effectiveness. Administration of industry by traditional methods also contributed to a situation where each branch consisted of the fewest possible number of enterprises.

The expedient structure of enterprises in individual branches should differ, taking into account the nature of the items, the technologies and the markets, and one should not strive for unification. The role of large enterprises is great, but one should expand the independence of production units within the enterprises as well as their market ties, and improve the internal system of management. In order to strengthen the industrial infrastructure, it is necessary to increase the number of well-equipped small and medium-sized enterprises. It is expedient to allow a great deal of diversification and to support initiative and all kinds of innovation. It is necessary to improve cooperation among enterprises, to stimulate their joint motivation, and to establish closer organizational ties between research and planning-design collectives and production.

As a result of correct decisions that have been made recently, certain trusts have been abolished and many production units (plants) which were previously parts of large enterprises have been given independence. A great deal of assistance is also given to the organization and development of independent small and medium-sized enterprises. It is becoming possible to create daughter enterprises and to organize all kinds of societies. Certain enterprises have been given the right to conduct foreign trade operations independently.

Since January 1981 there has been an essential change in the organizational system of the administration of industry as well. The most important is the formation of the industrial ministry, whose competence now includes primarily the development of the industrial policy, in addition to operational leadership. The rights of the State Committee for Materials and Prices and the Hungarian Chamber of Commerce have been expanded. Certain changes have also been made in the economy on the part of the government, including the number and competence of government commissions. The role of the State Planning Committee is essentially unchanged. The coordination of current operational tasks of administration of the economy and also international economic ties of the Hungarian Council of Ministers have been entrusted to the Economic Commission.

The Industrial Ministry was created on the basis of the previously existing ministries of heavy industry, metallurgy and machine building, and light industry. The construction materials industry is under the Ministry of Construction and Civil Construction, as before, and the food industry is under the Ministry of Agriculture and the Food Industry. "From the standpoint of administration of the economy, the formation of the Industrial Ministry serves a dual purpose," said J. Marjai, deputy chairman of the Council of Ministers and chairman of the Economic Committee. "On the one hand, this strengthens centralized leadership and it increases the unity of the administration of



industry. Thus the activity of the unified ministry is more organically included in the work conducted by the government. On the other hand the independence and responsibility of the enterprises increase. The enterprises receive a great deal of assistance from the ministry in developing their concepts of development and selecting the areas for international ties. At the same time they have greater independence and responsibility in selecting the production structure and the areas of sales on a higher level of management."

In the sphere of industry, the State Committee for Materials and Prices has taken on the functions for circulating products and the initial functions for price setting, which before this were carried out by the branch ministries. The committee has begun to play a large role in providing production both with objects of consumption and with means of production, and supplying them in such a way that the relationship between supply and demand corresponds to the national economic plan.

The role of the Hungarian Chamber of Commerce has been expanded because of the fact that it has officially become the agency that represents and coordinates the interests of state enterprises. In addition to international activity and solving foreign economic problems, the chamber should collect and submit opinions from the enterprises and their proposals regarding decisions earmarked by the government. Subsequently it should help the enterprises in their mutual cooperation and in the coordination of their interests: conduct special consultations, and have agencies for increasing skills, improving documentation and so forth. Because of this the branch ministries will be relieved of many tasks which can be carried out better by the enterprises themselves.

The organizational changes that have been made open up broad possibilities of improving the system of administration, which is becoming more streamlined, efficient and capable of better taking into account the interests of the enterprises. The changeover to the new state in the development of industry requires expansion of scientific investigation of the results of development and problems that arise, analysis and utilization of the experience of other socialist countries, the disclosure of theoretical interconnections and the development of practical proposals.

COPYRIGHT: Izdatel'stvo "Nauka," "Ekonomika i organizatsiya promyshlennogo proizvodstva ", 1983.

11772

CSO: 1820/111

## BOOK REVIEWS

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 4, Apr 83 (signed to press 2 Mar 83) pp 168-178

[Article by F. M. Bordkin, doctor of economic sciences, and A. P. Leont'yev, candidate of economic sciences (Novosibirsk): "Control of Socio-Economic Processes and Science"]

[Text] How does one accelerate the intensification of socialist production and increase its efficiency? More profound scientific substantiation of the operation of the entire system of economic administration, mastery of modern methods of planning, stimulation and selection of economic structures, and increased social activity of the workers gives the key to the solution to this problem. Extensive explanation of these principles, generalization of advanced experience in their practical utilization, and their creative development and concretization are important functions of soviet economic science. For managers of administrative personnel, a series of five books has been published under the general title "Scientific Fundamentals of Control of Socio-Economic Processes." It was prepared through the efforts of the professor and teaching staff of the Academy of Social Sciences under the CPSU Central Committee with the extensive participation of managers of party, soviet and economic workers. The publication is oriented toward assisting in the formation of an entire idea of the condition and development of the science of control of socio-economic processes and generalizing the experience that has been accumulated in the country in the establishment and functioning of progressive systems of administration.

### The Essence and Functions of Administration

"Sushchnost' i funktsii planovogo upravleniya [The Essence and Functions of Planned Administration], ed. by R. A. Belousov and A. M. Omarov, Moscow, "Ekonomika," 1981.

The first book will serve as an introduction to the entire series. It considers the initial methodological points in connection with the higher level of collectivization of production and the need for its further specialization and concentration.

In a socialist society administration acts to regulate nationwide cooperation of labor. A higher level of socialist collectivization of production is a most important pattern in the development of this cooperation. Its essence consists in nationwide assimilation of the means of production in the interests of the

society. Yet administrative relations reflect the fact that nationwide cooperation under socialism is still not perfect since there are two forms of socialist ownership of the means of production.

The most important form of realizing direct social relations is planning. It is noted then that in a concrete system of administration of the economy any attempt "to advance to the free commodity and monetary relations to the detriment of direct social relations inevitably entails a weakening of planned organization of public production and a strengthening of random elements and the prevalence of group interests over nationwide interests." The possibility of expedient utilization of commodity relations in administration is created with the leading role of direct social relations which are realized through planning. At the same time it is recognized as inadmissible to "diminish the role of commodity and monetary relations in administration, because this entails a weakening of the collective and private interests of the workers" (p 24).

The system of objective economic laws is regarded as a "support point" in the activity of the manager. This makes it possible to "clearly determine the tasks for the forthcoming planning period, to reveal concrete stimuli for production, to resolve contradictions that arise with fewer outlays, and to achieve the earmarked goals" (p 55). The diversity of forms of manifestation of economic laws provides a certain freedom to maneuver in economic policy and at the same time places great responsibility on the administrative agencies.

Control of the movement of the efficiency of public production is characterized as "one of the most important tasks of administration of the economy at all of its levels" (p 74). It is recognized that the criteria for the effectiveness of production must be regarded in light of the social and economic goals of socialist development. The problems of distributing the country's productive forces are presented from the standpoint of efficiency.

With the development of economic systems the subjective factor plays a larger role and it assumes qualitatively new features because of the planned nature of social production. The conditions of economic activity become more complicated. Therefore, the requirements on managers, the principles of selecting and placing personnel, the methods of training them and providing them with political and moral education and so forth, which were formulated by V. I. Lenin, retain their crucial importance.

The book presents well those problems that pertain to the practice of selecting and placing administrative personnel. Activity in this area embraces "planning and predicting the demand for specialists; evaluating the personal and business qualities of the workers; forming a reserve for advancement; and organizing the activity of the personnel service" (pp 106-107). But so far there is not an adequate normative or methodological base for working with personnel, which impedes checking on the correctness of the selection of managers for one position or another. In order to evaluate the quality of the labor of managers, it is recommended that three approaches be taken: evaluating the results of the activity, the activity itself, and the subject of the activity. Tasks of training and increasing the skills of specialists and managers are discussed. A description is given of the existing system of training and the principle directions for improving it.

A considerable amount of attention is devoted to the modern technical base and automated control systems. Technical equipment is necessary for automation and mechanization of administrative functions which, in the given stage, have been studied and formalized for changing over to "paper-free" technology of organization of administration. "In the new technology the main information flows are contained within electronic computers and systems of electronic computers, right up to systems of a national and even an international scale " (p 118). As a result, the prerequisites are met for relieving administrative workers of numerous routine operations, which enables them to engage completely in really creative work for analyzing the situations that arise and developing administrative decisions. Effective utilization of various types of automated control systems creates new possibilities for improving the quality of management.

In the concluding part of the book they present the tendencies in the development of planned administration of the economy in foreign CEMA countries, and also the theory and practice of administration in the capitalist economy (a critical analysis).

#### Methods and Forms of Administration

"Metody i formy upravleniya sotsialisticheskoy ekonomikoy" [Methods and Forms of Administration of a Socialist Economy], ed. by R. A. Belousov and A. M. Omarov, Moscow, "Ekonomika," 1981.

The second book is devoted to an analysis of the concrete forms and methods of functioning of the economic mechanism and its restructuring in the modern stage, as well as to a consideration of the means for purposive and coordinated influence on the rates and proportions of socialist reproduction at various levels of administration. In the structure of the book two main sections of the economic mechanism are clearly singled out: 1) national economic planning, including such an important stage as prediction; 2) the utilization of autonomous financing and other economic levers.

The book correctly notes the objective need to improve the quality of national economic planning which, as the central unit of administration, requires more careful scientific substantiation. This is shown by the tasks of changing over the economy to a mainly intensive path of development, the considerable expansion of the group of possible variants for achieving the social and production-economic tasks that have been set, the increased role of foreign political ties, and so forth. There arises the problem of the formation of an "integral, methodologically intercoordinated system of long-range, medium-range and annual plans with increased significance of the five-year plan as the main form of planning at all levels of management" (p 5). It is also necessary to increase the special-purpose orientation of plans, to provide for clear-cut formulation of socio-economic special-purpose arrangement of the long-range plan, and to achieve balance of plans and further development of the balance method for substantiating indicators of the plan. The book takes note of the active role of the balance in the selection of the trajectory of the development of the national economy, the need for integration of the principles of special-purpose organization of plans, their leading units, comprehensiveness and balance in the form of a problem-program (special-purpose-program) approach to



national economic planning. The application of economic-mathematical methods and models and their combination into a multilevel system, which is being practiced increasingly, make it possible to utilize methods of optimization of planning decisions in national economic planning.

Predictions of the development of the national economy play an independent role in the system of administration, that is, the disclosure and prediction of objective tendencies and results of its development. The book presents the main functions of predictions and indicators for the classification of predictions. The methodological unity of various methods and models of the development of comprehensive predictions of the development of the national economy and its constituent parts are ensured by principles of prediction--system, adequacy, alternatives and purposiveness. There are two approaches that are singled out from the totality of existing methods and models of prediction--genetic and normative (special-purpose), and the areas and boundaries of their utilization are indicated.

The book deals with problems of autonomous financing as a method of planned administration, which not only does not contradict the plan, but, on the contrary, is a powerful means of implementing it. Three stages of autonomous financing are distinguished in the economic mechanism--the basic autonomous financing unit, internal subdivisions of production associations and higher units of administration (industrial associations and ministries). Criteria for evaluating the activity of associations and other autonomously financed systems are analyzed, as is the policy for the formation of incentive funds in them. In direct connection with this the book considers the utilization of finances and credits in administration of the national economy.

Autonomous financing activity and effective utilization of financial levers depend largely, if not to a decisive degree, on the system of price setting. Within the framework of improving the economic mechanism, the stability of wholesale prices, rates for cargo shipments and price estimates in construction increase; and the stimulating influence of prices on the technical process and product quality is stronger. There is an overall revision of prices in order to bring them closer to publicly necessary expenditures of labor, to overcome losses in individual branches and enterprises, and to improve the structure and ratio of prices. Assignments are made for changing the levels of prices, their ratios and their structure. Methodological issues of accounting for changes in prices in national economic plans are investigated. As a result, prerequisites are created for planning prices in a way that is inseparably connected to the planning of material and value proportions.

Among the problems of control of scientific and technical progress special attention is devoted to improving the planning and creation of organizational and economic conditions for its acceleration.

An important place is assigned to presenting criteria for the effectiveness of the administration of a socialist economy. Here the authors substantiate the thesis about the productive nature of administrative labor and elucidate questions of changing and increasing the effectiveness of planned administration.

## Implementing the Party Economic Policy

"Partiynoye rukovodstvo ekonomika" [Party Leadership of the Economy], ed. by R. A. Belousov and G. B. Khromushin, "Ekonomika," 1981.

The third book elucidates the leading role of the party in the system of economic administration. It develops the idea that success can come only with a scientific substantiated policy--a policy that relies on awareness of the objective laws of development and a study of the tendencies for advancement of production, and also the corresponding changes in the way of life. It discloses the methodological provisions that make it possible to understand more deeply the party socio-economic policy and the mechanism for its implementation. At the basis of the awareness of the objective laws of party development is the economic policy, its strategy and tactics as a most important area of its activity which is inseparably related to the entire system of social relations. Of essential interest are the forms and methods of implementing party economic policy, its organizational activity, work with personnel, work for developing the creative activity of the masses, and so forth.

An important place is occupied by the presentation of practical experience of party organizations--the Rostov, Lvov, Tula and Novosibirsk CPSU Obkoms, and also the party committee of the AvtoVAZ association--in the struggle for increasing the effectiveness of production and improving the quality of work in industry, agriculture and other branches. Every economic manager will find a good deal that is instructive here. Even though the experience that is recalled was previously extensively publicized in the press and became quite widespread, still its presentation is largely original, it contains new approaches and it is read with special interest.

In the concluding part of the book the authors consider the relatively less developed aspects of party leadership of the process of improving the economic mechanism--improvement of the quality of administrative decisions and improvement of the methods of analysis of economic activity on the part of party committees.

## Organizational Structure

"Organizatsionnaya struktura upravleniya khozyaystvom" [The Organizational Structure of Administration of the Economy], ed. by R. A. Belousov and A. M. Omarov, Moscow, "Ekonomika," 1981.

The fourth book includes problems of organizational structures of administration in connection with tasks for further deepening public division of labor and concentrating specialized production. Tendencies in the formation and development of organizational structures of administration are characterized as a manifestation of an objective pattern in socialist production. This problem is the more significant since their formation has not yet been completed in our economy.

The most important modern requirements on organizational structures are presented in generalized form, and the need for improving them as well as for refining the general schemata for administration of the branches of industry are substantiated.

The most important prerequisite for designing an organizational structure of administration of any economic system is the determination of the goals, tasks and functions of administration, and also the disclosure of the informal relations that exist in the system.

The work reflects the practical achievements in the formation of administrative structures that correspond to the needs for the development of the socialist economy. The results of the formation of new organizational structures of productions and administration under the past five-year plan are analyzed in detail, primarily using the example of the automotive industry, and also production associations that produce machine tools and fabrics. They also disclose the peculiarities of the approach of Soviet managers to the problem of improving control of the corresponding economic systems and their understanding of the forms and methods of solving technical, economic and social problems under the conditions of developing organizational structures. A great deal of attention is devoted to the types, structures and tendencies in the development of autonomously financed associations--the basic unit of industry. The importance of problems of the social development of the labor collective is emphasized. Measures are recommended for improving the general plans for administration of the branches, which envision a better substantiated restructuring of the local, middle and higher levels of administration.

An essential place is allotted to combining branch and territorial approaches to the control of socio-economic processes and increasing the role of local soviets. The essence of these problems is revealed with the example of Leningrad and Leningrad Oblast, and also the Vilnius city soviet of people's deputies. The authors note the peculiarity of the lower territorial administration which consists in the close contact with all the diversity of daily activity of people of various social groups, occupations and ages. Therefore the book discusses in detail the territorial aspect of raising the material level of the life of the population, improving the utilization of free time, and using organizational forms for controlling social development as well as comprehensive planning in the region. The main function of this activity is considered to be providing conditions for the all-around development of the individual.

#### Social Aspects of Administration

"Sotsial'nyye aspekty upravleniya" [Social Aspects of Administration], ed. by R. A. Belousov and G. Ya. Frolov, Moscow, "Ekonomika," 1981.

The fifth book of the series reveals primarily tasks for further development and strengthening of socialist democracy in production. Social processes are a multifaceted object of administration which are characterized by high dynamism and complicated dependencies.

Control of the development of social relations is oriented toward bringing classes and other social groups closer together, strengthening the union of the working class and the peasantry, and equalizing the conditions for the labor and life of workers in the city and in the country. Purposive influence on the development of these relations is included in the general functions of administration since it involves the resolution of ideological and socio-psychological

problems. It is obvious that the main goals of control of social relations cannot be achieved through the efforts of any system alone: they can be achieved only within the framework of a certain integral organism which embraces all of the decisive conditions of the living environment--production, spiritual and everyday. In this connection the book considers the social functions of the spiritual sphere of activity in general, the tasks of social development of the production collective and the peculiarities of controlling social development in the city and the region.

Problems related to forming a new type of worker and expanding his participation in the administration of production, and to improving the administration of socialist competition are discussed in detail. In order to solve these problems it is of fundamental importance to have "an attitude toward labor which provides for complete realization of the capabilities of man, his creative potential" (p 81).

A certain amount of attention is devoted to the legal foundations of leadership of the national economy. The law reinforces principles, forms and concrete methods of state influence on economic relations and determines the legal position of economic agencies. Strict observance of the competence of administrative agencies and managers, which is established in the corresponding normative documents, plays an essential role in the development of social relations.

The social infrastructure is defined as "a system of institutions and organizations that create and provide for general conditions for the life of man in the sphere of labor, socio-political life, culture, the family and daily life" (p 204). It is described with quantitative and qualitative characteristics, and in quantitative terms the functions it carries out are defined as the difference between the amounts of the norm and the level achieved. There has been no comprehensiveness in the development of the social infrastructure for a long time and many of its elements existed independently of one another which ended up in immense losses related to labor turnover, disturbance of the stability of labor collectives, and so forth. Within the framework of improving the administration of the social infrastructure it is recommended that measures be taken which are based on recognizing the many aspects of the problem which are of an organizational, socio-economic, legal and socio-psychological nature.

The planning of social processes is a subject of special consideration. "The objects of social planning are the economic and social relations that arise among people directly in the process of joint labor activity and outside of it" (p 119). The main content of planning of social development at the level of the labor collective can be reduced to four tasks:

improvement of the social culture of the production collective;

improvement of working conditions and protection of the health of workers of the enterprise;

improvement of wages and housing and cultural-domestic conditions;



communist education of the individual and development of the social activity of the workers.

A complex of measures is suggested for improving the planning of social development, and the need is demonstrated for training personnel who are capable of skillfully leading this branch of activity.

Still, in this extensive work there are, in our opinion, certain questionable points and omissions. Thus there is some doubt about the attempt made by the authors to combine in one work two opposing statements: not to touch upon questionable issues and to present key issues of administration in a largely new way. This is probably why the books do not contain a survey of scientific literature, make scanty use of special articles and monographs, and do not always coordinate the conclusions and recommendations with a concrete analysis of existing practical situations in the branches and at the enterprises. For example, the practice of utilizing economic laws in planned administration is presented in the most general form, without adequate illustrations from the experience of the Gosplan and other planning agencies in resolving modern problems of the economic and social development of the USSR.

The relative collectivization of labor under socialism is explained only by the existence of two forms of socialist property. And the significance of the lengthy historical processes of public division of labor and the real tendencies toward its specialization and cooperation are not adequately taken into account. In practice, this impedes, in particular, a correct determination of the social consequences of one direction of technical progress or another.

The question of the potential and realized advantages of socialist countries in creating a statewide automated system for collecting and processing information requires more detailed and concrete elucidation. The appearance and development of hierarchical structures of administration are explained in the book by the need to overcome the limited possibilities of man to receive information in a unit of time. The more important and complicated processes and specialization and combination of individual units of administration are overlooked by the authors.

It seems to us that certain definitions also need to be discussed and refined. The issue would hardly be exhausted if each person were called a subject of administration, but without a disclosure of how and with what each person is controlled and the difference between the control of implements, mechanisms and large social systems, and the actual place of each individual social group in the existing system of administration.

The book notes that means of information exert a major influence on the formation of the individual in the family and the school. In our opinion, this is incorrect since it unjustifiably reduces the role of activity in the final emergence of the individual. Social relations in the collective are not considered sufficiently, particularly the need to overcome social differences between members of a single production collective.

For some reason the concept of economic responsibility does not include its initial indicator--the need to account for one's actions. Analysis of the interaction between the manager and the collective is still not developed to the point of a detailed presentation of the most expedient distribution of the functions of the manager and the collective at various levels of the administrative system. Generalization of practical experience in expanding the authority of the labor collectives, which is envisioned by the USSR Constitution, would show concrete ways of democratization of economic administration which are inherent in socialism.

The preparation of a series of books joined together by a single idea, consistent logic, a well-thought-out structure, and consistent analysis of concrete situations is a complicated and difficult matter. This makes the success of the authors and editors of the series under review even more impressive. This is a valuable initiative, an important social order has been fulfilled. Administrative management personnel have received a unique encyclopedia in five volumes which give an authoritative presentation of modern ideas about the scientific fundamentals of the control of socio-economic processes. There is reason to hope that the new books will help the party and economic aktiv to master the science of administration and to become aware of the diverse experience that has been accumulated at various levels of work in this area.

COPYRIGHT: Izdatel'stvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1983.

11772

CSO: 1820/111

End

**END OF**

**FICHE**

**DATE FILMED**

20 July 83